

# **EXHIBIT 16**

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

GOOGLE LLC , )  
)  
PLAINTIFF , )  
)  
VS. ) NO.  
) 3:20-cv-06754-  
SONOS , INC. , ) WHA  
)  
DEFENDANT. )

\_\_\_\_\_  
GOOGLE LLC , )  
)  
PLAINTIFF , )  
)  
VS. ) NO. C 20-06754 WHA  
)  
SONOS , INC. , )  
)  
DEFENDANT. )

ZOOM VIDEO DEPOSITION OF EXPERT WITNESS  
DOUGLAS SCHMIDT, PH.D.  
THURSDAY, MARCH 3, 2022

JOB NO. 5116748  
REPORTED BY: D'ANNE MOUNGEY, CSR 7872

1 DEPOSITION OF DOUGLAS SCHMIDT, PH.D., TAKEN ON BEHALF OF  
2 GOOGLE AT REDWOOD CITY, CALIFORNIA, COMMENCING AT  
3 9:08 A.M. ON THURSDAY, MARCH 3, 2022, BEFORE D'ANNE  
4 MOUNGEY, CSR 7872.

5  
6  
7 APPEARANCES OF COUNSEL:

8  
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20  
21 ALSO PRESENT:

22 KIMBERLEE DECKER, VIDEOGRAPHER  
23  
24  
25

## I N D E X

WITNESS	EXAMINATION	PAGE
DOUGLAS SCHMIDT, PH.D.,	BY MR. KAPLAN	6

## E X H I B I T S

NO.	PAGE	DESCRIPTION
EXHIBIT 1	7	EXPERT REPORT OF DOUGLAS C. SCHMIDT
EXHIBIT 2	14	U.S. PATENT U.S. 9,967,615
EXHIBIT 3	31	U.S. PATENT U.S. 10,779,033
EXHIBIT 4	71	U.S. PATENT U.S. 2011/000433
EXHIBIT 5	84	U.S. PATENT U.S. 2012/00899
EXHIBIT 6	121	KEY STL FEATURES: CONTAINERS, AND ALGORITHMS

QUESTIONS INSTRUCTED NOT TO ANSWER

(NONE)

1 REDWOOD CITY, CALIFORNIA

2 THURSDAY, MARCH 3, 2022; 9:08 A.M.

3  
4  
5 THE VIDEOGRAPHER: Good morning. We're on 09:08:27  
6 the record at 9:08 a.m. on March 3rd of 2022.

7 All participants are attending remotely.

8 Audio and video recording will continue to  
9 take place, unless all parties agree to go off the  
10 record. 09:08:58

11 This is media unit 1 of the recorded  
12 deposition of Douglas Schmidt, Ph.D., taken by  
13 counsel for Sonos in the matter of "Google versus  
14 Sonos," U.S. District Court, Northern District of  
15 California. 3:20-CV-06754. 09:09:16

16 And "Sonos versus Google, U.S. District  
17 Court, Northern District of California.  
18 3:21-CV-7559.

19 My name is Kimberlee Decker from Veritext  
20 Legal Solutions and I am the videographer. The 09:09:39  
21 court reporter is D'Anne Moungey. I am not related  
22 to any party in this action, nor am I financially  
23 interested in the outcome.

24 Counsel and all present will now state  
25 their appearances and affiliations for the record. 09:09:50

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1 If there are any objections to proceeding, please  
2 state them at the time of your appearance, beginning  
3 with the noticing attorney.

4 MR. KAPLAN: This is Marc Kaplan from Quinn  
5 Emanuel Urquhart & Sullivan on behalf of Google. 09:10:00

6 MR. LEE: This is George Lee from  
7 Lee Sullivan Shea & Smith on behalf of Sonos. I  
8 also have with me today Michael Boyea from Lee  
9 Sullivan Shea & Smith.

10 One clarification is that this deposition 09:10:19  
11 is being taken by Mr. Kaplan, who is counsel for  
12 Google in the case.

13 THE VIDEOGRAPHER: Will the court reporter  
14 please swear in the witness.

15  
16 DOUGLAS SCHMIDT, PH.D.,  
17 having been first duly sworn by the reporter, was  
18 examined and testified as follows:

19  
20 MR. KAPLAN: Ready to proceed? 09:10:52

21 THE VIDEOGRAPHER: Please proceed.

22 ///

23 ///

24

25 09:10:54

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EXAMINATION

BY MR. KAPLAN:

Q Dr. Schmidt, can you please state your first and last name for the record.

A D-O-U-G-L-A-S, S-C-H-M-I-D-T. 09:11:01

Q And your county of residence?

A Williamson County.

Q Did you meet with any attorneys for Sonos to prepare for your deposition today?

A I did. 09:11:19

Q Who did you meet with?

A I met with George Lee, Jae Pak, and Michael Boyea.

Q How long did you meet with Mr. Pak, Mr. Lee and Mr. Boyea? 09:11:37

A At what point?

Q To prepare for your deposition today.

A Probably maybe four to six hours.

Q Did you meet with anyone else besides the attorneys for Sonos to prepare for your deposition today? 09:11:58

A No.

Q Dr. Schmidt, how long did you spend preparing your claim construction declaration?

A I don't recall off the top of my head. 09:12:19

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1 Q So you have access to Exhibit Share?

2 A I do.

3 Q Could you open up Exhibit 1, please.

4 A Sure.

5 (Whereupon, Google Exhibit 1 was 09:12:32

6 marked for identification by the

7 Court Reporter.)

8 THE WITNESS: Okay. I have it open.

9 BY MR. KAPLAN:

10 Q This is the claim construction declaration 09:12:49

11 that we're going to be discussing today and that you

12 prepared; is that right?

13 A That is correct.

14 Q Roughly how long do you think you spent

15 preparing this declaration? 09:13:03

16 A I'm sorry. I don't recall off the top of

17 my head. It was not something I remember tracking

18 in my mind.

19 Q Do you think it was more than 20 hours?

20 A 20 hours is probably a rough estimate. 09:13:25

21 Something along those lines.

22 Q Dr. Schmidt, who is your current employer?

23 A I'm currently employed by Vanderbilt

24 University.

25 Q You also do expert consulting? 09:13:45

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1 A That is correct.

2 Q Do you do expert consulting out of the  
3 litigation context?

4 A I've done expert consulting outside the  
5 litigation context, that's correct, yes. 09:14:01

6 Q Roughly what percentage of your income do  
7 you think comes from expert consulting for  
8 litigation?

9 A Oh, that's a good question.

10 Again, I'm not really sure off the top of 09:14:14  
11 my head.

12 Q Do you think it would be around 50 percent?

13 A No.

14 Q Do you think it would be more than  
15 50 percent or less than 50 percent? 09:14:24

16 A Less than 50 percent.

17 Q Do you think it would be more than  
18 25 percent?

19 A I'm not sure. I haven't looked at the -- I  
20 haven't looked at my tax -- 1099s for the past year. 09:14:36  
21 I haven't got around to doing my taxes yet, so I  
22 don't know.

23 Q Dr. Schmidt, you've been deposed before;  
24 right?

25 A That's correct. 09:14:48

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1 Q So you're familiar with the ground rules of  
2 depositions; is that fair?

3 A Yes.

4 Q I'll be very brief, then.

5 So the deposition process consists of me 09:14:59  
6 asking you questions and you responding to them  
7 fully and truthfully.

8 Understand?

9 A I do.

10 Q And from time to time your attorney may 09:15:08  
11 interpose an objection. The objection is generally  
12 just to preserve the record, so what you should do  
13 is let your attorney interpose his objection and  
14 then answer the question, unless you're instructed  
15 not to answer for some reason. 09:15:21

16 Does that make sense?

17 A It does.

18 Q We can take a break whenever you need  
19 during the deposition. And we're not going to be  
20 going particularly long today. Just let me know if 09:15:31  
21 you would like a break. The only thing I ask is if  
22 there is a question pending, that you answer the  
23 question before we take a break. Okay?

24 A Sure.

25 Q Everything that is being said at this 09:15:42

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1 deposition is being taken down by the court reporter  
2 in realtime, so we should try not to talk over each  
3 other to make her job a bit easier today.

4 Does that make sense?

5 A It does. 09:15:53

6 Q And if at any time in the deposition -- I  
7 guarantee you there will be times that I ask you a  
8 question that's not clear to you. Please let me  
9 know and I will try to clarify it for you. Okay?

10 A You bet. 09:16:05

11 Q The court reporter has placed you under  
12 oath. You understand that your testimony is being  
13 given under oath and subject to penalty of perjury,  
14 just as if you were testifying in a court of law?

15 Do you understand that? 09:16:18

16 A Yes.

17 Q And because of that, it's very important  
18 that we get your most accurate and full testimony  
19 today.

20 Is there any reason you can't testify 09:16:28  
21 accurately and fully today?

22 A No.

23 Q Dr. Schmidt, you mentioned that you're a  
24 professor at Vanderbilt University.

25 Do you have a particular field of 09:16:43

1 expertise?

2 A I have a number of areas that I focus on.  
3 I focus on -- my research focuses on mobile Cloud  
4 computing, distributed and network systems, cyber  
5 physical systems, software engineering, distributed 09:17:25  
6 realtime and embedded systems, machine learning, and  
7 artificial intelligence, data science.

8 And I also teach a number of courses  
9 related to mobile device programming and accessing  
10 Cloud services, web services and so on. 09:17:49

11 Q That's a long list.

12 Dr. Schmidt, which of those fields of  
13 expertise did you think were applicable to the  
14 opinions that you issued in your claim construction  
15 declaration? 09:18:08

16 A Well, many of those fields relate to the  
17 topics that I opine upon here. Certainly topics  
18 related to distributed and network systems, mobile  
19 Cloud computing, systems related to software  
20 engineering, software development, and, in general, 09:18:27  
21 my knowledge about web-based programming, web  
22 systems.

23 I draw from many of my different fields of  
24 expertise for declarations in general and reports in  
25 general. And this particular one, it would be a 09:18:45

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1       number of those different areas that I mentioned  
2       before.

3           Q       Would you say that your background in  
4       software engineering was important to your  
5       declarations?

09:18:58

6           A       Certainly software engineering plays a role  
7       in understanding how almost everything else I do  
8       related to distributed systems or web-based systems  
9       or cyber systems, and so on, and mobile Cloud  
10       computing. My knowledge of software design and  
11       testing, programming, which is part and parcel of  
12       software engineering, plays a key part in my  
13       experience and my expertise in this field -- these  
14       fields.

09:19:14

15          Q       Do you teach courses on software  
16       engineering?

09:19:28

17          A       I have taught courses on software  
18       engineering in the past. My current courses focus  
19       largely again on developing mobile applications in  
20       Cloud computing environments, and software  
21       engineering plays a key part in terms of software  
22       design, software implementation techniques, software  
23       testing, and quality assurance techniques, software  
24       processes.

09:19:42

25                So pretty much everything I do ultimately

09:19:58

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1 is based upon my knowledge of effective software  
2 development, techniques and practices.

3 Q Which software languages have you taught in  
4 your course work?

5 A Oh, gosh. Lots. So I've taught -- going 09:20:18  
6 back to the early days when I was actually a grad  
7 student, I taught courses in Ada, and Pascal, and C  
8 and C++.

9 And then later when I became a professor, I  
10 taught courses that related to Java and JavaScript 09:20:38  
11 and various other scripting languages, very shell  
12 script languages.

13 And I'm probably forgetting a few. I think  
14 I taught courses using functional programming  
15 languages and/or functional programming features in 09:20:54  
16 modern languages, like functional program features  
17 in C++, functional programming features in Java and  
18 so on.

19 I'm probably leaving a few languages out,  
20 but I've taught literally hundreds of courses over 09:21:08  
21 my 35 plus years as a professional, so I've  
22 encountered lots of different languages.

23 MR. KAPLAN: Dr. Schmidt, I'm going to  
24 introduce another exhibit, which will be the '615  
25 Patent. 09:21:28

1 Let me know when you see that.

2 (Whereupon, Google Exhibit 2 was  
3 marked for identification by the  
4 Court Reporter.)

5 THE WITNESS: I have successfully 09:21:54  
6 downloaded that patent.

7 BY MR. KAPLAN:

8 Q Okay. You're familiar with the '615  
9 Patent; right?

10 A That's correct. 09:22:01

11 Q And the declaration that you issued that's  
12 going to be available, you can download it and refer  
13 to it as you want. This isn't a memory test.

14 But for now, I'm going to be asking you  
15 about the '615 Patent. Okay? 09:22:16

16 A Okay.

17 Q I would like you to turn to claim 13 of the  
18 '615 Patent. For reference, it begins column 19,  
19 line 48, or so.

20 A I'm there. 09:22:43

21 Q Okay. You're familiar with claim 13 of the  
22 '615 Patent?

23 A I am.

24 Q The first element of claim 13 of the '615  
25 Patent reads: 09:22:58

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1 "A tangible nontransitory  
2 computer readable storage medium,  
3 including instructions for  
4 execution by a processor,  
5 instructions when executed cause 09:23:08  
6 a control device to implement a  
7 method comprising."

8 Do you see that?

9 A I do.

10 Q Is source code executable by a processor? 09:23:19

11 MR. LEE: Objection to form.

12 THE WITNESS: Are you speaking -- what

13 level do you mean executable?

14 BY MR. KAPLAN:

15 Q I'm not sure how to rephrase the question. 09:23:49

16 This source code, in its source code form,  
17 that's readable by a human, executable by a  
18 processor?

19 MR. LEE: Same objection.

20 THE WITNESS: It -- 09:24:03

21 MR. LEE: Vague and incomplete.

22 THE WITNESS: It depends.

23 BY MR. KAPLAN:

24 Q So source code as it's written by humans is  
25 executable by a processor? 09:24:18

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1 MR. LEE: Same objection; mischaracterizes.

2 THE WITNESS: Depending on the context,  
3 source code could either be compiled by some kind of  
4 translator into some lower level formalism typically  
5 referred to as assembly code or perhaps machine  
6 code. And under some scenarios, the machine code  
7 would then be what would be executed by a processor  
8 directly by the processor or directly as would be  
9 the case in a normal chip set.

09:24:40

10 But, of course, depending on what kind of  
11 language and what kind of environment, there could  
12 also be interpreted code, such that the source code  
13 would be interpreted by some type of interpreter  
14 which would be running on top of a processor.

09:24:59

15 That's why I'm a little confused as to your  
16 question, what you mean by "source code" in this  
17 context, since it's a little bit vague as to what  
18 that term means.

09:25:15

19 BY MR. KAPLAN:

20 Q Typically machine code rather than source  
21 code is what is executed by a processor; is that  
22 fair?

09:25:24

23 MR. LEE: Objection to form.

24 THE WITNESS: Again, it really depends on  
25 the context in which you're referring, because you

09:25:35

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1 can have hardware -- again, it just depends on the  
2 context.

3 There's no one answer there that covers  
4 everything in its entirety.

5 BY MR. KAPLAN: 09:25:52

6 Q So in your view, source code can be  
7 directly executed by a processor?

8 MR. LEE: Objection to form.

9 THE WITNESS: Again, I'm not sure what you  
10 mean by "a processor." But I think I put forth at 09:26:01  
11 least two different scenarios that are very common,  
12 one of which is source code in some language such as  
13 C++ or Java or C or JavaScript or whatnot.

14 Could be translated by a compiler into a  
15 lower level formalism either, again, assembly code 09:26:22  
16 or machine code and that code could be executed by a  
17 processor.

18 But depending on what kind of processor  
19 you're referring to, there's also interpreters that  
20 can execute code in its, quote, "source form." 09:26:35

21 So, again, there's no one answer there that  
22 applies in every situation.

23 BY MR. KAPLAN:

24 Q For mobile applications distributed through  
25 IOS or the Android app store, are those executed in 09:26:50

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1 source code form?

2 MR. LEE: Objection to form, vague,  
3 incomplete.

4 THE WITNESS: Again, we'd have to be more  
5 specific. 09:27:07

6 So there are a whole range of different  
7 ways of being able to run mobile applications.  
8 Sometimes we have mobile apps or -- called native  
9 apps, which are often written in languages like Java  
10 or Kotlin, for the Android operating platform, or 09:27:24  
11 Objective-C or, say, Swift for the Apple iOS  
12 operating platform. That's one way to do things.

13 There's other ways you could implement  
14 mobile applications using scripting languages and  
15 conceivably possible to write for processors that 09:27:43  
16 would interpret the programs written in interpreted  
17 code.

18 So I would have to know more specifics  
19 about the details of a particular platform to give  
20 you a precise answer that wouldn't leave out certain 09:27:59  
21 options that are either doable or have been done.

22 BY MR. KAPLAN:

23 Q In the IOS ecosystem, can you give me an  
24 example of a program that's distributed through  
25 IOS -- 09:28:14

1 MR. LEE: Objection; foundation --

2 BY MR. KAPLAN:

3 Q -- that is executed in source code form, as  
4 opposed to machine readable code?

5 MR. LEE: Objection; foundation, form. 09:28:23

6 THE WITNESS: Again, as I was mentioning  
7 earlier, scripting languages like JavaScript are  
8 interpreted running on top of various forms of  
9 virtual or physical machines.

10 So they would be an example of something -- 09:28:44  
11 those types of languages would be examples of things  
12 where the source code is really what's executed by  
13 the underlying virtual machine as opposed to being  
14 compiled down to a lower level.

15 BY MR. KAPLAN: 09:29:01

16 Q You mentioned programs are generally  
17 written in Swift and Objective-C that are posted on  
18 the app store; is that right?

19 A I think I said those were native. Native  
20 apps. It's possible to run applications on IOS that 09:29:11  
21 are written in other languages besides Swift or  
22 Objective-C.

23 Q Are programs distributed through the app  
24 store that aren't written in Swift or Objective-C?

25 MR. LEE: Objection; foundation. 09:29:28

1 THE WITNESS: Well, there's a wide range  
2 of -- what should we call them -- mobile device  
3 independent programming frameworks and languages,  
4 such as Unity or PhoneGap or React Native, just to  
5 list a few, that allow developers to write in other 09:29:52  
6 languages besides Objective-C and Swift and have  
7 those apps run in the context of mobile devices.

8 BY MR. KAPLAN:

9 Q For the file that's downloaded from the  
10 Apple App Store to the user's device, is that file 09:30:09  
11 in executable form or does it need to be extracted  
12 and installed?

13 MR. LEE: Objection; foundation, form.

14 THE WITNESS: I'm not sure what you mean by  
15 "extracted." 09:30:26

16 BY MR. KAPLAN:

17 Q Can a mobile processor within an iPhone  
18 execute a downloadable from the IOS app store  
19 without any processing being done to that file?

20 MR. LEE: Objection; foundation, form, 09:30:42  
21 vague, incomplete hypothetical, outside the scope.

22 THE WITNESS: You'll have to give me a more  
23 specific example. I'm not really sure off the top  
24 of my head.

25 /// 09:30:59

1 BY MR. KAPLAN:

2 Q What more specifics would you need?

3 MR. LEE: Objection; form.

4 THE WITNESS: I'm just not sure what

5 you're -- when you talk about extracted or 09:31:11

6 additional processing, I'm not sure what those --

7 I'm not sure how you're using those terms.

8 BY MR. KAPLAN:

9 Q What is the format of an app that's

10 downloaded from the Apple App Store? 09:31:21

11 MR. LEE: Objection; vague, foundation.

12 THE WITNESS: I'm not sure I recall off the

13 top of my head.

14 BY MR. KAPLAN:

15 Q Do you know what the format of an app 09:31:35

16 that's downloaded from the Google App Store is

17 called?

18 MR. LEE: Same objection.

19 THE WITNESS: Well, again, if you're

20 referring to something like an APK file, that may be 09:31:46

21 what you're referring to, but there's lots of

22 different pieces there, so I'm not sure if that's

23 what you're getting at.

24 BY MR. KAPLAN:

25 Q What is an APK file? 09:31:56

1           A     It's basically a file that describes the  
2     various components that are necessary to make up an  
3     application that runs in the context of Google -- of  
4     Android, really.

5           Q     Is an APK file executable? 09:32:09

6           MR. LEE:  Objection; foundation, relevance.

7           THE WITNESS:  I'm not sure what you mean by  
8     "executable."

9     BY MR. KAPLAN:

10          Q     Can a processor execute an APK without 09:32:22  
11     additional processing being done on the APK?

12          MR. LEE:  Objection; foundation, form,  
13     compound.

14          THE WITNESS:  Again, I'm really not sure  
15     what you're asking.  An APK file contains various 09:32:37  
16     types of components or resources and a -- the Google  
17     platform, the package manager.

18                 In fact, portion of that platform uses the  
19     contents of the APK file.  It does processing to it.  
20     It executes it. 09:32:57

21                 I think something else jumped in.  That  
22     wasn't me.

23                 I said the Google package manager -- I'm  
24     sorry -- the Android package manager is the -- one  
25     of the various pieces of the Android platform that 09:33:16

1 uses the APK file -- the contents of the APK file to  
2 install an application -- a native application.

3 There's other ways of installing and  
4 running applications on an Android or global device  
5 besides that, but that's one way to do it. 09:33:34

6 BY MR. KAPLAN:

7 Q And after the native application is  
8 installed, can it be executed?

9 MR. LEE: Objection; form, foundation,  
10 relevance. 09:33:41

11 You know, Marc, I let this go a little bit,  
12 but we're really here to talk about claim  
13 construction and his declaration, I thought, and I'm  
14 not really sure how any of this relates. It's  
15 outside the scope. 09:33:51

16 Sounds like you may have some other  
17 infringement questions you're trying to get to, but  
18 I think that would be improper here.

19 Try to get back to his declaration or some  
20 of the exhibits you marked. 09:34:03

21 BY MR. KAPLAN:

22 Q You can answer.

23 A Can you repeat the question, please?

24 Q It was for the native application that is  
25 installed, that can be executed; right? 09:34:19



1 MR. LEE: Objection to form, foundation.

2 Once again, Marc, this is really nothing to  
3 do with claim construction, his declaration that  
4 we're here for. You can get this from your expert  
5 if you want. 09:34:32

6 But I just don't see that this is part of  
7 his declaration. In fact, you have the exhibits  
8 marked and the questions don't relate to it at all.

9 You can answer.

10 THE WITNESS: You have to explain what 09:34:44  
11 you mean by "execute" and what's doing the  
12 execution, how does that execution differ from the  
13 previous steps required from an APK file.

14 I'm sort of at a loss for understanding the  
15 context of the question. 09:34:56

16 BY MR. KAPLAN:

17 Q If you can't answer, that's okay. If you  
18 need more information, let me know.

19 A The terms you're using, execute -- execute  
20 by what? I don't know what's doing the execution. 09:35:12

21 Q This is going to be my last question on  
22 this topic, but as we were just discussing, there's  
23 an APK download that was installed and then the  
24 question was simply: Can it be executed by the  
25 device? 09:35:34

1           A     Under what set of assumptions?

2           Q     Are there assumptions necessary?

3           A     Sure.

4           Q     Tell me what assumptions you think are

5     necessary. 09:35:54

6           MR. LEE:  Objection to the form.

7           THE WITNESS:  It's the -- there's so many

8     assumptions that are required there.

9           Is it actually a validate APK file?

10          Is this a user of the device? 09:36:05

11          If there's a user of the device, does the

12     user actually want to launch whatever was

13     downloaded?

14          Those are all things.

15          Another thing that's still not clear from 09:36:14

16     the scope of your question is:  What does it mean to

17     execute by the device?

18          What's doing the execution?

19          Earlier you asked me about -- appeared like

20     you were asking about a processor, but now it sounds 09:36:25

21     like you're talking about a device.

22          Is the device hardware?

23          Is the device software?

24          There's so many parts to the hypothetical

25     you're putting forth there, so I need to understand 09:36:35

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1 more thoroughly what it is you're putting forth in  
2 the hypothetical to be able to give an answer that  
3 wouldn't just be a wild guess.

4 (Speaking simultaneously.)

5 THE REPORTER: I'm sorry. You were 09:36:52  
6 speaking over each other.

7 MR. LEE: I didn't realize you were  
8 talking, Marc.

9 Go ahead.

10 BY MR. KAPLAN: 09:36:58

11 Q Let's move to the second element in claim  
12 13 which begins:

13 "Causing a graphical  
14 interface to display a control  
15 interface including one or more 09:37:05  
16 transport controls to control  
17 playback by the control device."

18 Do you see that?

19 A I do.

20 Q Do you have an understanding of what this 09:37:15  
21 claim element means?

22 MR. LEE: Objection; form, foundation,  
23 relevance.

24 I don't think this is part of his  
25 declaration. 09:37:25



1 the link that's provided in the Exhibit Share, it  
2 doesn't work at all.

3 Q So if you click the link -- I see.

4 Give me a moment.

5 It's funny. I have one version of the 09:39:55  
6 patent in Exhibit Share that is searchable and one  
7 version that isn't now, so I understand your issues.

8 I think, Dr. Schmidt, if you right click  
9 the document and download it --

10 A Yeah, that's what I've done. I've 09:40:12  
11 downloaded it.

12 Q It's not searchable after you do that?

13 A No. I mean, it's very weird. I have  
14 like -- I'm -- I downloaded my exhibit -- my  
15 declaration, sorry, my claim construction 09:40:30  
16 declaration, and that's searchable quite well. I  
17 can search that no problem.

18 Q Huh. Hmm.

19 So when you downloaded the '615 Patent  
20 natively to your desktop, it's not searchable when 09:40:45  
21 you open it in Adobe or Chrome?

22 A Yeah. No. It's weird.

23 Right now I'm searching on transport and  
24 it's highlighting the word "on" in the middle of  
25 claim 9, and so it's like now I click on "next" and 09:41:00

1 now it's highlighting the word "playback."

2 For some reason there's something wrong  
3 with that PDF. It's probably something wrong with  
4 the PDF file, I guess.

5 Is there another way to get the '615 09:41:20  
6 Patent?

7 Q I mean, it's not ideal, but you could go to  
8 Google patents and download it yourself from that  
9 website.

10 A Let me try that, if you don't mind. 09:41:33

11 Q I'll probably have to ask you a couple  
12 questions to make sure you're looking at the same  
13 document, but this is just the nature of online  
14 depositions these days, I suppose.

15 A Let me see if I can -- what is it, 9967615? 09:41:47

16 I think that's the right one.

17 The patent's name is "Networked Music  
18 Playback"; is that right?

19 Q Correct.

20 A Good. That part looks good so far. 09:42:03

21 That is so weird.

22 Q That doesn't work either, downloading it  
23 from Google?

24 A That's the same problem. Exactly the same  
25 problem. 09:42:27

1 Q I just did it on my computer and I can  
2 search it, so --

3 A Let me ask another -- is it the case that  
4 the specification for the '033 Patent is the same as  
5 the one for the '615? 09:42:42

6 Q I believe they're the same.

7 A Because I have a copy of the '033 Patent  
8 that seems to be searchable. I have no idea why.

9 Q Well, we can use the '033 Patent, that's  
10 fine. 09:43:00

11 A Okay. Let's do that. It won't have all  
12 the same claims, but we can probably find those  
13 other ways.

14 Q Right.

15 MR. KAPLAN: Let me introduce the '033 09:43:06  
16 Patent as an exhibit and I'll ask some questions to  
17 make sure we're looking at the same document, even  
18 though you're using your version.

19 Is that okay?

20 THE WITNESS: Okay. That's fine. 09:43:17

21 MR. KAPLAN: I've introduced as Exhibit 3,  
22 U.S. Patent number 10779033.

23 THE WITNESS: All right.

24 ///

25 ///  
09:44:09

1 (Whereupon, Google Exhibit 3 was  
2 marked for identification by the  
3 Court Reporter.)

4 BY MR. KAPLAN:

5 Q Do you see that exhibit? 09:44:11

6 A It's loading. It should be there  
7 momentarily.

8 Q Now, given the searching issues,  
9 Dr. Schmidt, can you confirm that the version of the  
10 '033 Patent that you're looking at is the same as 09:44:21  
11 the '033 Patent that I introduced as Exhibit 3?

12 A I'm actually using the version that you  
13 just put up there.

14 Q Okay.

15 A And it works fine. Go figure. I can 09:44:33  
16 search that one.

17 So the good news is, I can read the claims  
18 from '615, but I can search in the '033. I think  
19 between those two things we should be fine.

20 Q Okay. So I'm going to ask you a slightly 09:45:04  
21 different question. Let's just turn back to the  
22 '615 Patent.

23 A Okay. I'm there.

24 Q If you go to claim 13.

25 A I'm there. 09:45:27

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1 Q In claim 13, there's a claim term  
2 "multimedia content."

3 Do you see that?

4 A I do.

5 Q Do you have an understanding of what 09:45:57  
6 multimedia content means in the context of the '615  
7 Patent?

8 MR. LEE: Calls for a legal conclusion.

9 You can answer, if you can.

10 THE WITNESS: Let me just take a quick look 09:46:16  
11 and see if I discuss that in my declaration.

12 So let's see. Let me see if I can point  
13 you -- well, if you take a look at my claim  
14 construction declaration, paragraph 33, page 10, I  
15 mention a description of -- I'm summarizing the '615 09:46:52  
16 Patent, and its description at a local playback  
17 system.

18 And it talks about how the local playback  
19 system is capable of playing back multimedia  
20 content, such as audio. I think that's the first 09:47:09  
21 sentence in paragraph 33. It gives a bunch of  
22 references to '615 Patent for various portions  
23 describing that.

24 So if we go back to the patent that I can  
25 now search, then -- let me find something real quick 09:47:30

1 here.

2 (Document reviewed by the witness.)

3 THE WITNESS: So in reading through the

4 patent spec, it makes it clear that audio is an

5 example of multimedia content. 09:48:40

6 BY MR. KAPLAN:

7 Q And what is an example of audio that would

8 be multimedia content?

9 A Well, if you take a look on paragraph 47 of

10 my declaration, it mentions a single song would be 09:49:26

11 an example of multimedia content. I give other

12 examples of other things it can be. Multimedia

13 content as well.

14 It says: Single song, a video, particular

15 Internet radio station, a user defined playlist with 09:49:44

16 multiple songs or videos, a service defined playlist

17 of multiple songs, videos, and album of songs,

18 et cetera.

19 Q And how would one identify that a person

20 was looking at a single song? 09:50:06

21 MR. LEE: Objection to form.

22 THE WITNESS: I'm sorry. I don't

23 understand your question, what does it mean to look

24 at a single song?

25 /// 09:50:21

1 BY MR. KAPLAN:

2 Q What are the -- you said a single song as  
3 an example of multimedia content; is that fair?

4 A That's one example, yes.

5 Q And how do I know that I'm looking at a 09:50:30  
6 single song which is an example of multimedia  
7 content?

8 MR. LEE: Objection to form, vague.

9 THE WITNESS: In what context?

10 BY MR. KAPLAN: 09:50:47

11 Q Like what other characteristics of the  
12 single song that we're talking about which is an  
13 example of multimedia content?

14 MR. LEE: Objection to form; vague, and  
15 confusing. 09:51:02

16 THE WITNESS: I guess I don't understand  
17 when you say "looking." Looking at a -- looking at  
18 audio. What does that mean by "looking at it"?

19 Are you referring to some kind of user  
20 interface? 09:51:14

21 Are you referring to looking at a thumb  
22 drive that contains the contents?

23 What does it mean to look at a song in the  
24 way you're asking the question?

25 /// 09:51:26

1 BY MR. KAPLAN:

2 Q What would be an example of a single song  
3 that would meet your definition of audio?

4 A Again, in what context are you asking?

5 Q You said that a single song is an example 09:51:41  
6 of audio, which is an example of multimedia content;  
7 right?

8 A I believe I said something along those  
9 lines, but I'm trying to understand what -- I'm  
10 trying to understand what you're asking me, the 09:51:57  
11 context in which you're asking me.

12 Are you asking -- sorry. Go ahead.

13 Q Well, so a single song is an example of  
14 audio which is an example of multimedia content and  
15 my question is: What's an example of a single song? 09:52:08

16 MR. LEE: Objection to form.

17 THE WITNESS: Again, I'm not sure I  
18 understand in what context you're asking me, what's  
19 an example.

20 You're asking me to name songs or are you 09:52:23  
21 asking me to name formats that you could use to play  
22 songs back, be they electronic or magnetic or some  
23 other media?

24 I'm not sure I understand the context of  
25 the question. 09:52:37

1 BY MR. KAPLAN:

2 Q Would an Mp3 file of Drake's newest hit be  
3 an example of a single song in this context?

4 MR. LEE: Objection; foundation.

5 THE WITNESS: I'm not familiar with Drake's 09:52:50  
6 latest hit, but one -- there's many different ways  
7 to represent audio content. And Mp3 files are one  
8 way to represent audio content.

9 BY MR. KAPLAN:

10 Q Are there any other ways that you could 09:53:03  
11 represent audio content that you're aware of?

12 A Sure.

13 Q What are those?

14 A There's other formats besides Mp3. There's  
15 other formats besides digital formats that can be 09:53:20  
16 used to represent audio content.

17 Q What's an example of a format that's not  
18 digital format that could be used to represent audio  
19 content?

20 A In what context? 09:53:41

21 Q I thought you just said that you could  
22 represent audio in the digital context, for example,  
23 with an Mp3 or you could represent it in the  
24 non-digital context; is that --

25 A That is correct. That is correct. 09:53:56

1 Q What would be an example of a non-digital  
2 context?

3 A A 45 record from back in the day.

4 Q Okay. Multimedia content playback is  
5 referred to the specification of the '615 Patent and 09:54:22  
6 the '033 Patent.

7 Do you understand that?

8 A I see the specification for the '033 and  
9 '615 Patent includes the phrase "multimedia  
10 playback," yes, I see that. 09:54:56

11 Q I was actually looking at "multimedia  
12 content playback."

13 Do you see that, too?

14 A I see several references to "multimedia  
15 content playback" -- 09:55:28

16 Q What would -- sorry. Go ahead.

17 A -- in the specification.

18 Q Okay. What would be an example of  
19 multimedia content playback?

20 A The way I see the phrase used in the 09:55:40  
21 specification appears, at least in column 2,  
22 starting on line 23 where it refers to a "multimedia  
23 content playback," and inside parenthesis it then  
24 says, "EG Sonos TM," and then it says "system."

25 Q Does multimedia content playback just mean 09:56:15

1 playback of the multimedia content we were just  
2 discussing?

3 A I don't believe I've rendered an opinion on  
4 that. I would have to take a closer look to see how  
5 that particular term is used, but I don't believe 09:56:32  
6 I've rendered an opinion on the meaning of  
7 "multimedia content."

8 Let me take a look before I say that. Let  
9 me take a look and see what I said, if I said  
10 anything. 09:56:44

11 (Document reviewed by the witness.)

12 THE WITNESS: I don't think I -- I don't  
13 think my declaration, unless I may need to read  
14 through it more carefully, but off the top of my  
15 head, I don't think it talks about the phrase 09:57:07  
16 "multimedia content playback."

17 I would have to take a more careful look to  
18 see what that term means before I render an opinion  
19 on it.

20 BY MR. KAPLAN: 09:57:19

21 Q Can I turn your attention back to claim 13  
22 of the '615 Patent.

23 A I'm there.

24 Q Okay. Under -- I'm going to call it  
25 element A, which is roughly halfway down in the 09:57:34

1 claim 13.

2 Do you see that?

3 A I think so.

4 Q The -- towards the end of paragraph A, the

5 claim reads: 09:57:56

6 "Corresponding to respective

7 locations of a multimedia

8 content."

9 Do you see that?

10 A I do. 09:58:04

11 Q Do you have an understanding of what that

12 means?

13 A Yes.

14 Q What does it mean?

15 A So in the context of what it's describing, 09:58:12

16 it's explaining how there's one or more resource

17 locators that are corresponding to respective

18 locations of the multimedia content.

19 So my understanding of corresponding to in

20 this context would be something akin to associated 09:58:31

21 with or related to.

22 Q Is the resource locator providing a

23 location?

24 MR. LEE: Objection to form.

25 THE WITNESS: I'm not sure what you mean by 09:59:01



1 "providing a location."

2 BY MR. KAPLAN:

3 Q Does the resource locator have to provide a  
4 location to meet this claim element?

5 MR. LEE: Objection to form, calls for a 09:59:14  
6 legal conclusion, scope.

7 THE WITNESS: I would have to read through  
8 the specification more carefully to get a sense of  
9 how resource locator relates to providing a  
10 location, but what my understanding here as the 09:59:34  
11 claim is written, resource locator is the phrase  
12 corresponding to mean associated with or related to.

13 So it doesn't look to me like it  
14 necessarily has to provide a location directly. It  
15 just needs to be able to be associated with 09:59:51  
16 locations and there's many different ways to do  
17 that, above and beyond providing a particular  
18 location of a resource.

19 BY MR. KAPLAN:

20 Q Is there a difference in your mind between 10:00:17  
21 the resource locator being associated with the  
22 location versus related to a location?

23 MR. LEE: Objection to form.

24 THE WITNESS: I think those are largely  
25 synonymous. 10:00:30

1 BY MR. KAPLAN:

2 Q Is it fair to say that, in your view, the  
3 resource locator doesn't have to provide a location?

4 MR. LEE: Objection to form.

5 THE WITNESS: Well, I describe this topic 10:00:59  
6 in my claim construction declaration in several  
7 places, one of which is in paragraph 1 of 1, and I  
8 describe what my understanding that a POSITA would  
9 have had at the time of the invention, which is that  
10 it would be a resource locator, generally refers to 10:01:22  
11 information that enables the device to access a  
12 resource or be associated with or related to a  
13 resource.

14 And I mention that that information could  
15 take various forms. It could take the form of some 10:01:33  
16 kind of identifier, such as maybe a key in a  
17 database, for example, an address perhaps in memory.  
18 It could be a uniform resource indicator, which is  
19 different from a Uniform Resource Locator.

20 It could be other things that facilitate 10:01:53  
21 some means by which a device could access a  
22 resource. And there's many, many other ways of  
23 doing it beyond the ones I listed there. Those are  
24 just some of the ones that would be obvious, but  
25 there's other ones that could be used, things like 10:02:08

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1 object references or monikers or UUIDs. There's a  
2 whole bunch of different ways to identify a  
3 resource.

4 So some of those would involve addresses,  
5 some addresses in the sense of, say, an IP address 10:02:23  
6 or a port number in the Internet, but many other  
7 ways of being able to identify resources that would  
8 not require addresses.

9 In fact, it's even possible to use URLs  
10 that don't encode an address in them by using a 10:02:39  
11 concept of persistent URL, which is really more of  
12 an access to a locator service as opposed to  
13 directly encoding the address into the URL itself.

14 BY MR. KAPLAN:

15 Q Would a song name correspond to a location 10:02:53  
16 of that song?

17 MR. LEE: Objection to form.

18 THE WITNESS: Depends quite a bit on how  
19 the lookup model would work. So it depends on the  
20 context, it depends on the use case. 10:03:13

21 BY MR. KAPLAN:

22 Q So a song might correspond to a location of  
23 another resource or it might not; is that right?

24 A Again, it depends on the implementation and  
25 the way in which the data models and data stores are 10:03:28

1 managed.

2 Q So a song name might correspond to a  
3 location of a resource, just depending on how the  
4 system is architected; is that right?

5 A I wouldn't quite use those terms, but 10:03:47  
6 depending on how the data model or the data  
7 management portion of the system is structured,  
8 there's various ways of being able to identify  
9 resources. An identifier could be used. The  
10 identifier conceivably could be the name of the 10:04:04  
11 song. That could be one way to do it, depending on  
12 how the data model and the database -- or the data  
13 management system is constructed.

14 Might not be the most efficient way of  
15 doing it in terms of minimizing footprint, but 10:04:18  
16 that's really just an encoding question.

17 Q So as long as there's a way to translate  
18 between the song name and its address, would the  
19 song be corresponding to a location of the song?

20 MR. LEE: Objection to form. 10:04:42

21 THE WITNESS: Again, I would have to  
22 understand a little bit better about what you mean  
23 by some of those terms, but as I describe here in  
24 paragraph 1 of 1 of my claim construction  
25 declaration, the concept of resource locator 10:04:58

1 generally refers to some kind of information which  
2 could be many different forms.

3 It could take the form of identifiers or  
4 addresses, or URIs, URLs, object references,  
5 whatever -- whatever is needed to be able to 10:05:14  
6 un-ambiguously associate that resource locator with  
7 the actual resource that's of interest.

8 BY MR. KAPLAN:

9 Q So let me give you an example. I'm on  
10 iTunes. I download an Mp3 of my favorite artist. 10:05:31  
11 Are you with me so far?

12 A Okay.

13 Q I've got the Mp3 stored on my own computer  
14 and I play it from time to time. Okay?

15 A Okay. 10:05:47

16 Q In that hypothetical, would the song name  
17 correspond to a location of where the song is  
18 stored?

19 MR. LEE: Objection to form, foundation,  
20 incomplete. 10:06:03

21 THE WITNESS: When you say "song name," I'm  
22 not quite sure I understand how you're using the  
23 term "song name."

24 BY MR. KAPLAN:

25 Q So when I downloaded the song from iTunes, 10:06:12

1 I saved it as "Drake's new hit" and that's the song  
2 name.

3 MR. LEE: Objection to form. Same  
4 objection.

5 THE WITNESS: So depends on a whole bunch 10:06:28  
6 of different other factors as to whether that song  
7 name would be the resource locator.

8 BY MR. KAPLAN:

9 Q So in my hypothetical, after I downloaded  
10 the song from iTunes and saved it as Drake's song in 10:06:45  
11 my computer, it's possible, in your view, that the  
12 song name would correspond to the location of the  
13 song?

14 A Again, I would have to -- there's so many  
15 different pieces of your hypothetical that I don't 10:07:03  
16 quite understand yet, so it's hard to be able to  
17 answer that question.

18 Q What other information can I give you that  
19 will allow you to answer the question?

20 A So where did you store the file? 10:07:15  
21 Are you -- are you --

22 Q I'm sorry. Let me take it one by one.  
23 I stored it on my desktop.

24 A And in what did you -- what specifically  
25 was the name that you used? 10:07:35

1 Q "New hit song" was the name of the file.

2 A Does the file have a file extension?

3 Q Dot Mp3.

4 A Okay. Are there spaces or hyphens?

5 Q There are spaces. 10:07:58

6 A So if I understand your question -- or your

7 hypothetical, rather, if there was a file in some

8 folder in your -- or in your desktop -- say, in your

9 desktop, there's a file that has a name that is

10 "Drake's new hit song" dot Mp3, then were you to 10:08:24

11 click on that in your finder or file Explorer, or

12 whatever desktop you're using, then that would

13 cause -- assuming that everything was configured

14 properly in your operating system, that would cause

15 the appropriate media player to be launched to play 10:08:48

16 that song.

17 So this is the part I'm a little confused

18 on. Is the name of the song, what's associated?

19 Well, there's a way to be able to launch it and this

20 is just straightforward from using a file browser on 10:09:05

21 a desktop computer or laptop or whatever.

22 You're simply launching something that has

23 a name and that is associated with the content

24 that's being played.

25 Q So is your answer yes, the name of the file 10:09:24

1 would correspond to the location?

2 A Well --

3 MR. LEE: Objection to form.

4 THE WITNESS: -- the way I would -- again,

5 there's lots of different ways to look at that, but 10:09:38

6 in that particular situation, I was simply

7 explaining how if you have a file on the desktop

8 computer and you launch the file and the file has

9 the appropriate suffix that's understood by the

10 system and the system knows how to launch the 10:09:59

11 appropriate app to properly do something with

12 whatever it is you're launching, that that will

13 cause it to be launched.

14 As to how that relates to the original

15 topic we were discussing, which is from element A in 10:10:19

16 claim 13 in the '615 Patent, that was describing

17 resource locators that correspond to respective

18 locations of multimedia content.

19 So topping off the stack a couple layers,

20 the name of the file could be one way to associate 10:10:44

21 or locate the multimedia content.

22 BY MR. KAPLAN:

23 Q So in the hypothetical, the name of the

24 file could be a resource locator?

25 A Well, I think that's consistent with what I 10:11:00



1 say here in paragraph 101 of my claim construction  
2 declaration, that a resource locator generally  
3 refers to information that enables a device to  
4 access a resource and that that information could  
5 take various forms, such as an identifier, an 10:11:24  
6 address, a URI, a URL, and so on.

7 And so the name of a file -- or I guess  
8 more specifically here, the ability provided by a  
9 file browser on a modern computer to be able to  
10 click on the name of something that has an 10:11:44  
11 application associated with it, that's a form of an  
12 identifier. That could then be able to facilitate a  
13 device accessing your resource.

14 Q Let me add to the hypothetical.

15 So we've got the song stored on the 10:12:06  
16 desktop. The file name is New Hit Song.

17 Within that file there's metadata  
18 identifying the name of the song, which is going to  
19 be A1 for purposes of the hypothetical.

20 Do you follow so far? 10:12:23

21 A I think so.

22 Q Would A1 be -- strike that.

23 Would A1 correspond to the location of the  
24 file?

25 MR. LEE: Objection to form, incomplete. 10:12:37

1 THE WITNESS: I don't understand what you  
2 mean.

3 BY MR. KAPLAN:

4 Q We have a song that has been downloaded.  
5 It has a file name. It also has within the 10:12:51  
6 metadata, some name information.

7 And my question is whether that name  
8 information corresponds to the location of the file?

9 MR. LEE: Same objection.

10 THE WITNESS: Yeah. I would have to look 10:13:08  
11 more carefully into the way in which that  
12 information be stored. I don't know off the top of  
13 my head. I would have to look into it in more  
14 detail to see.

15 I'm also not sure what name you're 10:13:18  
16 referring to in the metadata either.

17 BY MR. KAPLAN:

18 Q On that last point, are you aware that  
19 files can be associated with metadata?

20 A Files can be associated -- in what context? 10:13:38

21 Q Well, if you download an Mp3, are you aware  
22 that programs can pull out metadata from that file  
23 to identify, for example, artist and song name?

24 A Yes.

25 Q So in this example, I'm asking whether the 10:14:08

1 song name metadata corresponds to the location of  
2 the file?

3 MR. LEE: Objection to form, incomplete  
4 hypothetical.

5 THE WITNESS: I am -- I would have to look 10:14:18  
6 more carefully into the way in which the Mp3 format  
7 stores name information to see what the relationship  
8 is, if any, between metadata associated with the  
9 name of the song and the location of the song to be  
10 able to answer that question precisely. 10:14:34

11 BY MR. KAPLAN:

12 Q What would be the ways in which it was  
13 stored where it would correspond to the location of  
14 the file?

15 MR. LEE: Objection to form. 10:14:48

16 THE WITNESS: Again, without knowing more  
17 about the way -- the specific detail about how Mp3  
18 stores names in metadata, I would have to look at  
19 that in more detail to know.

20 BY MR. KAPLAN: 10:15:07

21 Q I'm trying to ask a question and maybe the  
22 answer is I don't know, but I want to make sure the  
23 question is clear.

24 What I'm trying to ask is: What would be  
25 the instances where you would say yes, that main 10:15:15

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1 metadata information does correspond to the location  
2 of the file?

3 MR. LEE: Objection to form.

4 THE WITNESS: Again, I would have to look  
5 more deeply into the specifics of how metadata is 10:15:30  
6 stored in Mp3 in order to know what relationship, if  
7 any, there would be between metadata that's stored  
8 in Mp3 file associated with name and any location  
9 relevance, or not, that there might be, so I just  
10 don't know that off the top of my head. 10:15:50

11 I would prefer not to speculate on that  
12 because I would just be making a guess. And in  
13 order to do a proper analysis, I would have to look  
14 more carefully how it's stored.

15 MR. LEE: Marc, I think we've been going 10:16:02  
16 about an hour.

17 Is this a good time for a break?

18 MR. KAPLAN: I'm happy to take a break.

19 THE VIDEOGRAPHER: We're off the record at  
20 10:16 a.m. 10:16:10

21 (Whereupon, a recess was held  
22 from 10:16 a.m. to 10:28 a.m.)

23 THE VIDEOGRAPHER: We're on the record at  
24 10:28 a.m.

25 /// 10:28:28

1 BY MR. KAPLAN:

2 Q Dr. Schmidt, welcome back.

3 A Thank you.

4 Q Do you understand you're still under oath?

5 A Yes. 10:28:33

6 Q Did you have any discussions with your  
7 attorneys about the substance of your testimony  
8 during the break?

9 A No.

10 Q Let's turn to paragraph 47 of your claim 10:28:41  
11 construction declaration, which is Exhibit 1.

12 A I'm there.

13 Q In this first sentence in paragraph 47, you  
14 wrote that:

15 "POSITA would have understood 10:29:14

16 that a 'playback queue' is, in

17 more of a colloquial sense, a

18 'container' that can hold

19 multimedia for playback and that

20 different types and arrangements 10:29:28

21 of multimedia could be queued,"

22 and it goes on from there.

23 Do you see that?

24 You put "container" in quotes there.

25 What does "container" mean for you in this 10:29:39

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1 context?

2 A It's basically the data construct of some  
3 kind, as I say in the rest of the sentence, can be  
4 used to hold multimedia or media content for  
5 playback. 10:29:56

6 Q Is there a difference between a data  
7 construct and a data structure?

8 A Depends on the context.

9 Q Let's start with what you understand both  
10 to mean. 10:30:16

11 So what is a data construct to you?

12 A Well, I give examples of data constructs in  
13 paragraph 58, a little bit further down from  
14 paragraph 47 that we were just discussing, and I  
15 gave examples of data constructs. 10:30:39

16 So a single data variable would be an  
17 example of a data construct. Multiple data  
18 variables would be an example of a data construct.  
19 A data array, those would be -- that would be  
20 another example of a data construct. 10:30:55

21 It's some way of arranging data, one or  
22 more datum or data.

23 Q For the multiple data variables that would  
24 be a data construct to you, would there need to be a  
25 relationship between those multiple data variables 10:31:20

1 or not?

2 MR. LEE: Objection to form.

3 THE WITNESS: Help me understand what you  
4 mean by "relationship."

5 BY MR. KAPLAN: 10:31:31

6 Q Well, let me ask the question: Could you  
7 have unrelated multiple data variables that would  
8 form a data construct, in your view?

9 MR. LEE: Objection to form.

10 THE WITNESS: Again, I'm not sure what 10:31:43  
11 "unrelated" means in this context as you're using  
12 the term.

13 Related to what?

14 BY MR. KAPLAN:

15 Q Well, what did you mean by saying "multiple 10:31:52  
16 data variables could be a data construct"?

17 What would be -- strike that.

18 What would be an example, in your view, of  
19 multiple data variables that would form a data  
20 construct? 10:32:07

21 A So if you take a look at paragraph 88 in my  
22 claim construction declaration, I give an example, I  
23 believe, that illustrates this.

24 It says:

25 "A POSITA would have known 10:32:22

that a 'playback device' could  
store in its memory plural  
'multimedia items' across  
multiple data variables (in other  
words, not stored as an 'ordered  
list') and still playback the  
media in a specified order."

10:32:33

8	And then I go on and talk in the rest of	
9	that paragraph about how the playback device could	
10	have a data variable called "play_now." It gets	10:32:44
11	populated by a first multimedia item. And another	
12	data variable called "play_next" that gets populated	
13	by a second multimedia item. And then have the	
14	logic play the media corresponding to the play_now	
15	data variable before the media corresponding to the	10:33:00
16	play_next data variable.	

17 And, of course, this is just a specific  
18 example in a different part of my declaration  
19 talking about singular versus plural items, but I  
20 think it answers your question about the concept of 10:33:17  
21 a data construct and how the data construct could be  
22 something that would involve multiple variables,  
23 multiple data variables, as it says in paragraph 58.

24	Q In your example in paragraph 88, is there a	
25	relationship between the play now and play_next data	10:33:39



1 variables?

2 MR. LEE: Objection to form.

3 THE WITNESS: Again, I don't know what you

4 mean by "relationship." So the example that's

5 described here gives an instance of how these two 10:33:56

6 variables could store data or store, in this case,

7 the logic that is going to be populated by a

8 multimedia item, which could be various things that

9 I describe also in my declaration. And the code

10 that implements this or the logic that uses the 10:34:18

11 play\_now and play\_next data variables could use them

12 in the way as described here.

13 I don't know how that corresponds to the

14 phrase you use, "relationship."

15 BY MR. KAPLAN: 10:34:33

16 Q Well, presumably you could have two

17 variables that, in your view, together do constitute

18 a data construct, or in the alternative, you could

19 have two variables that together do not constitute a

20 data construct; is that fair? 10:34:49

21 A Again, without understanding the context,

22 it's hard to know how to answer that question.

23 Q Are every two variables going to form a

24 data construct, in your view?

25 A Again, without knowing -- without 10:35:05

1 understanding the context, it's hard to answer that  
2 question. I'm giving you a specific example here  
3 which are a pair of data variables that, as I  
4 described earlier in paragraph 58, would be an  
5 example of a data construct in this particular case 10:35:23  
6 relating to playback devices, having the ability to  
7 store in the memory multimedia items, plural.

8 Q Right.

9 What I'm trying to get at here is, I want  
10 to understand the basis for your opinion that allows 10:35:40  
11 you to identify when multiple independent variables  
12 will form a construct and when they won't.

13 Do you understand my question?

14 A I think so. I think I just gave you an  
15 example where two data variables are being used 10:36:04  
16 together with logic in order to perform some  
17 capability that could be useful in the context of a  
18 playback system that would form a data construct, as  
19 I describe in paragraph 58.

20 Q Can you give me an example of when two data 10:36:24  
21 variables would not form a data construct, in your  
22 view?

23 MR. LEE: Objection to form, incomplete,  
24 relevance.

25 THE WITNESS: I would have to think more 10:36:38

1       about it. In this case, I was looking for examples  
2       that demonstrated a data construct where multiple  
3       data variables could be used in the context of  
4       playback devices which, as I understand it, are the  
5       focus of the -- my claim construction declaration --       10:36:55  
6       one of the focal points of my claim construction  
7       declaration.

8       BY MR. KAPLAN:

9           Q       So let me try to narrow the question and  
10       I'll see if that helps.                               10:37:06

11                   In the context of playback devices, can you  
12       give me an example of when you would have two  
13       variables that would not form a data construct, in  
14       your view?

15                   MR. LEE: Objection to form, vague,           10:37:21  
16       confusing, scope, relevance.

17                   THE WITNESS: Yeah. I would have to think  
18       about that some more. It's outside the scope of  
19       what I've done here.

20                   My analysis is focusing on the different       10:37:32  
21       ways in which Google's construction of playback  
22       queue is overly narrow and, in fact, reads out a  
23       number of the different embodiments that are  
24       disclosed in the specification.

25       ///  
10:38:10

1 BY MR. KAPLAN:

2 Q Okay. Can you give me an example in the  
3 context of playback devices where you would have a  
4 single variable that would not form a queue?

5 MR. LEE: Same objection; form, scope, 10:38:36  
6 relevance.

7 THE WITNESS: A single variable that would  
8 not form a queue?

9 MR. LEE: It's vague, confusing. I'm  
10 sorry. 10:38:52

11 THE WITNESS: A Boolean flag of some sort,  
12 perhaps. Keep in mind, I haven't done that  
13 particular analysis in my declaration, so I would  
14 have to think about it, but seems like some Boolean  
15 flag. 10:39:12

16 BY MR. KAPLAN:

17 Q So what I'm getting at here is, you've  
18 provided -- I think at least an example in the case  
19 where you have two variables where that might fit  
20 the data construct definition that you gave, right, 10:39:27  
21 that's paragraph 88?

22 A That's correct.

23 Q I just want to ask one more time to make  
24 sure that the answer is clear.

25 Sitting here today, you can't give me an 10:39:40

1 example of two variables in the playback device  
2 context that would not form a data construct; right?

3 MR. LEE: Objection to form,  
4 mischaracterizes, vague, confusing.

5 THE WITNESS: Yeah. I wouldn't -- I don't 10:39:57  
6 think that's what I answered you before when you  
7 asked the same question.

8 BY MR. KAPLAN:

9 Q Well, then, I would like your answer as to  
10 what is an example of two variables in a playback 10:40:08  
11 context that don't form a data construct?

12 MR. LEE: Objection to form, vague,  
13 incomplete, scope, relevance.

14 THE WITNESS: I just go back to the answer  
15 I gave you when you asked the question two or three 10:40:22  
16 minutes ago.

17 I don't remember exactly what the answer  
18 was, but I'm sure it's there for the record.

19 BY MR. KAPLAN:

20 Q I thought that the answer was that you 10:40:32  
21 couldn't give me an example, sitting here today,  
22 because you thought it was outside the scope of your  
23 declaration.

24 A I don't think that's quite what I said, but  
25 I stand by what I said before. 10:40:44

1 Q Well, I'm going to have to ask it again  
2 because I think we had different understandings of  
3 what your testimony was, so I'll ask it one more  
4 time.

5 Can you give me an example in the playback 10:40:55  
6 device context of two variables that together don't  
7 form a data construct?

8 A And I'll just give the same answer I gave  
9 before.

10 I believe I asked -- you asked me that 10:41:06  
11 question before and I think I gave you an answer  
12 that I stand behind, so you may have a different  
13 interpretation of what the answer is, but I believe  
14 my answer is my answer.

15 Q I don't know what your answer was. I 10:41:24  
16 didn't get an example and I don't think you said --  
17 I don't recall an example, so can you answer it one  
18 more time, please?

19 MR. LEE: Objection to form, incomplete  
20 hypothetical, vague, confusing, relevance, beyond 10:41:36  
21 the scope.

22 THE WITNESS: Again, I'll just point back.

23 You asked me the question probably now four  
24 minutes ago and I gave you an answer at that time  
25 and I don't remember every detail of what I said, 10:41:48

1 but I think I answered your question.

2 So I'm just going to stick with what I said  
3 before, which should be in the record.

4 BY MR. KAPLAN:

5 Q Well, it's all in the record and I'm not 10:41:56  
6 trying to cross-examine you against your prior  
7 answer, both of those will be in the record, but I  
8 don't recall hearing an example like I asked for.

9 If you think you gave me one, I would like  
10 to hear that example again. 10:42:08

11 A I think my previous answer gave you the  
12 answer to your question.

13 Q Can you give me an example -- I'll ask it  
14 one more time and then we will move on. Okay?

15 Sitting here today, in the playback device 10:42:24  
16 context, can you give me an example of two variables  
17 that, together, don't form a data construct?

18 MR. LEE: Same objection; incomplete,  
19 vague, confusing, scope, relevance.

20 THE WITNESS: So again, I'll point you back 10:42:41  
21 to the response I gave you when you asked me that  
22 question the first time. I'm going to stay with  
23 that answer to your question.

24 BY MR. KAPLAN:

25 Q If you go to page 17 of your declaration. 10:43:32

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1 I'm going to be looking at footnote 4.

2 A I see that.

3 Q Is it your view that Google's construction  
4 is unclear as to whether or not it covers user  
5 defined playlists?

10:44:02

6 MR. LEE: Objection to form.

7 THE WITNESS: Let me see the context in  
8 which that footnote appears.

9 So this footnote appears in the context of

10 one of my other opinions that Google's proposed

10:44:44

11 construction appears to be given just a very narrow

12 example of one potential embodiment, good

13 embodiment, in my opinion, good potential

14 embodiment, a playback queue, which, in my mind,

15 appears to be more associated with what a person in

10:45:13

16 the ordinary skill in the art would be associated

17 with being a user defined playlist rather than

18 actually explaining what a playback queue is in the

19 construction.

20 And so that's the context. That's the

10:45:23

21 sentence that appears towards the end of

22 paragraph 47, and this footnote is just ripping on

23 this a little further, talking about a topic that

24 actually appears later in -- I think it's section D

25 of my declaration -- where I'm saying it's not clear

10:45:42

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1 to me as I read the proposed Google claim  
2 construction whether they're only intending for a  
3 playlist to be satisfied by a -- sorry -- a playback  
4 queue, not a playlist -- a playback queue to be  
5 satisfied by a user defined playlist, which is the 10:46:03  
6 way the construction appears to suggest because it  
7 says something about selected by the user for  
8 playback. That's the particular phrase that I'm  
9 addressing here.

10 And it appears to me that if that was the 10:46:20  
11 intent of Google's construction, it would exclude a  
12 number of different embodiments or examples that are  
13 explicitly described in the specification having to  
14 do with playing an album of songs, or a service  
15 defined playlist, or something as I say, actually, 10:46:40  
16 right above the footnote at the bottom of page 17  
17 continuing on to the top of page 18 where you could  
18 have some kind of online disk jockey service that  
19 will decide what songs to play next, which really  
20 isn't the same thing as being something selected by 10:47:00  
21 the user, or a song selected by the user, or  
22 multimedia content selected by the user.

23 So that's the way in which I'm addressing  
24 this issue of selected by the user for playback. It  
25 just wasn't clear to me, given the construction put 10:47:15

1 forward what Google's intent was.

2 BY MR. KAPLAN:

3 Q In paragraph 49 of your declaration, you  
4 set forth an opinion that Google's proposed  
5 construction would exclude service defined 10:47:32  
6 playlists.

7 Do you see that?

8 A Well, I think I'm just describing what an  
9 example of a service defined playlist is, or an  
10 Internet radio station is in paragraph 49, as I read 10:47:53  
11 paragraph 49.

12 Q Do you have a critique of Google's  
13 construction that service defined playlists would be  
14 excluded improperly by Google's construction?

15 A I think as I mentioned in footnote 4, it's 10:48:07  
16 just not clear to me what Google's construction  
17 means, because the construction includes the phrase  
18 "selected by the user for playback," and that  
19 particular analysis of the playback queue not being  
20 limited to user selected content, unlike what it 10:48:35  
21 appears that Google may be saying, actually appears  
22 starting towards the bottom of page 31.

23 And as I say in paragraph 93 on page 32,  
24 it's unclear to me whether Google's use of the term  
25 "selected by the user for playback," it's not clear 10:48:59

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1 to me whether Google intends that language to  
2 include queuing a list of media items curated by a  
3 third party media service, that's kind of a service  
4 provided approach, automatically queuing album songs  
5 by virtue of the user selecting the first song of an 10:49:17  
6 album.

7 And when I say other examples, having  
8 things related to queueing of other media items, or  
9 as we talked about before, some kind of disk jockey  
10 service. It's just not clear what Google means. 10:49:32

11 So I think my main critique, which  
12 continues on paragraph 93 and below, this is my  
13 understanding of my -- my not understanding of  
14 Google's phrase, because I don't understand what it  
15 means. 10:49:49

16 It appears that if it were to only be  
17 playback items that were multimedia that were  
18 selected by the user for playback, that would be  
19 inconsistent with a POSITA's understanding of the  
20 term "playback queue," as described in the two 10:50:04  
21 patents at issue.

22 Q Do you understand Google's proposed  
23 construction to require that the multimedia items  
24 are selected by the user for playback?

25 A I think the point I'm making, I don't

10:50:20

1 understand what Google means. It seems very  
2 unclear. So because it's unclear, I'm trying to  
3 provide an analysis of what it might mean and then  
4 describe why I believe that that analysis -- why  
5 that -- those meanings would be inconsistent with 10:50:40  
6 what's the intended part of the patents at issue.

7 Q Is it your understanding that the org list  
8 for the multimedia items are selected by playback --  
9 strike that. I didn't correctly quote the  
10 construction. 10:50:59

11 So Google's proposed construction says:

12 "An order list of multimedia  
13 items is selected by the user for  
14 playback."

15 Do you see that? 10:51:10

16 A I see Google's proposed construction, yes.

17 Q Is it your understanding that the "is  
18 selected by the user for playback" refers to  
19 multimedia items, or an ordered list?

20 MR. LEE: Objection to form. 10:51:26

21 THE WITNESS: So if you take a look at  
22 paragraph 91 of my declaration, I say essentially  
23 it's my understanding that:

24 "Google's proposed  
25 construction for 'playback queue' 10:51:50

1 further requires that the  
2 'ordered list of multimedia  
3 items' be 'selected by the user  
4 for playback.'"

5 BY MR. KAPLAN: 10:52:01

6 Q But Google's proposed construction uses the  
7 word "is," which refers to a singular subject as  
8 opposed to a plural subject.

9 So Google's construction is actually  
10 grammatically saying it's the ordered list that is 10:52:12  
11 selected by the user for playback; right?

12 A Well, as I read it here, it's the ordered  
13 list of multimedia items.

14 Q And the ordered list is a singular subject;  
15 correct? 10:52:30

16 A Ordered list is a singular subject, but  
17 it's my understanding that the phrase "ordered list  
18 of multimedia items" is what Google's proposing be  
19 selected by the user for playback.

20 Q So under Google's proposed construction, 10:52:48  
21 it's not the multimedia items themselves that are  
22 selected by the user for playback, it's the ordered  
23 list; right?

24 A I'm not really sure what distinction you're  
25 making here. When I read the analysis here in 10:53:08

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1 section D of my declaration, I'm referring to the  
2 phrase "ordered list of multimedia items" as being  
3 what Google is proposing be selected by the user for  
4 playback.

5 Q Well, part of your critique -- I'm sorry. 10:53:26

6 Go ahead, Dr. Schmidt.

7 A And the analysis in section D of this part  
8 of my claim construction declaration is asking  
9 questions about what does that mean?

10 And it's not clear what that means, as I 10:53:42  
11 describe here. It's not clear whether it excludes  
12 or includes queueing a playlist of media items, so I  
13 think leaving aside the whole issue of ordered,  
14 whether it has to be an ordered list, that's  
15 discussed in section C of my declaration. 10:54:01

16 But as I say in paragraph 93, it's not  
17 clear whether Google's construction excludes  
18 queueing a playlist of media items, or a playlist is  
19 singular, to your point, of media items that is  
20 curated, so there's the singular "is," by a third 10:54:19  
21 party media service.

22 That's the part of the analysis here that I  
23 find confusing and unclear and it appears that it  
24 could very well be the case that Google's -- if that  
25 is the intent, that the playlist must be selected, 10:54:32

1       whether that's something that is -- it's not clear  
2       what Google is suggesting here and whether they're  
3       reading out things that appear to be intentionally  
4       part of the patents at issue.

5           Q     If it's the playlist that's selected by the           10:54:51  
6       user, then falling under that would be examples like  
7       Pandora where a radio station is selected by the  
8       user; right?

9           A     There's a bunch of different examples that  
10      I think occur in the patent of ways to get content           10:55:10  
11      play.

12          Q     Pandora being one of them, I believe.  
13      Spotify is another example; correct?

14          A     Let's see.

15                The patent gives several different examples           10:55:34  
16      of third party music applications, including  
17      Pandora, Rhapsody, Spotify, and so on.

18          Q     And in the Pandora example for -- just  
19      taking that as a single example, you understand that  
20      for a user to use Pandora, he or she selects a radio           10:55:52  
21      station which is associated with a service defined  
22      playlist; right?

23          A     That's my understanding.

24          Q     And in that example, the user is not  
25      actually identifying and selecting all of the songs           10:56:08

1 or multimedia items within that radio station, the  
2 service is identifying them in playing those; right?

3 A Again, that's my understanding.

4 Q Let's turn to paragraph 51 of your  
5 declaration.

10:56:34

6 A Okay.

7 MR. KAPLAN: I'm going to introduce another  
8 exhibit. Please let me know when you have it up.

9 THE REPORTER: Is this Exhibit 4?

10 MR. KAPLAN: This is Exhibit 4. And it  
11 will be United States Patent application number  
12 U.S. 2011/4330.

10:57:14

13 (Whereupon, Google Exhibit 4 was  
14 marked for identification by the  
15 Court Reporter.)

10:57:56

16 MR. LEE: Don't worry about the dogs. I  
17 know Mike has at least two sitting there.

18 THE REPORTER: Sorry.

19 MR. LEE: It's not a problem at all.

20 THE WITNESS: Okay. I got it.

10:58:07

21 BY MR. KAPLAN:

22 Q Can you turn to paragraph 51 of that  
23 reference. I apologize.

24 Can you turn to paragraph 48 of that  
25 reference.

10:58:28



1           A     I'm there.

2           Q     There's a sentence within that paragraph  
3     that begins:

4                     "When the decision 316  
5             determines that the specified                     10:58:42  
6             media item is to be played back  
7             next, the specified media item  
8             can be added 318 to a top of a  
9             playback queue.  Alternatively,  
10            when the decision 316 determines                     10:58:54  
11            that the specified media item is  
12            not to be played back next, the  
13            specified media item can be added  
14            320 to a bottom of the playback  
15            queue."   10:59:07

16                    Do you see that?

17           A     I do.

18           Q     This portion of the reference is describing  
19     how media items can be added or removed from a  
20     queue?   10:59:16

21           A     No.

22           Q     Why not?

23           A     I don't see anything in that -- in the line  
24     you read to me that describes removing an item.

25           Q     Fair enough.                                     10:59:54

1           This portion of the record is just  
2       describing adding items to a queue; is that fair?

3           A     The reference says what it says.  It says  
4     that the -- in this particular context, it talks  
5     about how an item can be added to the top of a                   11:00:12  
6     playback queue or added to the bottom of a playback  
7     queue.  I see that.

```

8           Q      What does that mean, "top of a playback
9           queue"?

```

10	A	I would have to read further to see what	11:00:23
11		they're referring to by "playback queue" here to see	
12		what they mean.	

13 Q Would a person of art understand what the  
14 top or bottom of a queue refers to?

15	While you think about it, let me ask a	11:00:58
16	slightly better question that actually makes sense.	

```
17         Would a person of skill in the art
18     understand what the top or bottom of a queue refers
19     to, "Q-U-E-U"...
```

20	A	It depends on the context.	11:01:11
----	---	----------------------------	----------

21 Q Do you understand what adding a media item  
22 to the top or bottom of a queue means?

23           A       That's what I'm looking for, to see how  
24           it's being used in this particular patent  
25           description and how it's defined. 11:01:31

1           Again, I'm trying to see if there's a  
2           definition of how queue is defined here.

3           Q     So can you answer my question without  
4           finding the definition on the patent, or not?

5           A     Well, depending on the context in which           11:02:57  
6           queue is used, top and bottom are not common terms  
7           used to describe queues. That's why I was trying to  
8           see if they were defining it in some other way.

9           Q     What terms are used to describe the front  
10          and end of a queue, typically?                           11:03:13

11          A     Again, it depends on the context in which  
12          we're referring.

13          Q     How about in the playback device context?

14          A     Typically people -- well, again, it's hard  
15          to say. If you think about a queue, queues can mean           11:03:35  
16          many different things. As I describe in my report  
17          on paragraph 47, a queue is -- a playback queue is a  
18          container that can be used to pull multimedia for  
19          playback and different types and arrangements of  
20          multimedia could be queued. So what that's really           11:04:03  
21          saying is, there's different ways to understand what  
22          a queue could be.

23                 So I don't know if there's -- I don't think  
24          there's really one dictionary definition of a  
25          playback queue that would be appropriate for all           11:04:13

1 context, and that's why I describe here in  
2 paragraph 47 and later in paragraphs 58 and 59, how  
3 I believe a person of ordinary skill in the art  
4 would have understood playback queue to be  
5 interpreted in the context of this patent. 11:04:31

6 How the other patent -- that's why I was  
7 trying to see how they're giving definition of a  
8 playback queue, and they may be defining it in some  
9 more specific way.

10 Q Have you ever heard of queues described as 11:04:48  
11 having a first-in/first-out characteristic?

12 A Queues can be organized in all kinds of  
13 different ways, so that's one potential way of  
14 organizing, but there's lots of other ways to  
15 organize queues as well. 11:05:03

16 Q Have you ever programmed using queues that  
17 have a first-in/first-out characteristic?

18 A I have.

19 Q In what context -- strike that.  
20 Have you ever taught in any of your classes 11:05:14  
21 at Vanderbilt University that queues might have a  
22 first-in/first-out characteristic?

23 A I have taught queues in a number of  
24 different ways. Typically when I talk about queues,  
25 I talk about them being able to have different 11:05:32

1 queuing disciplines or queuing protocols, if you  
2 will, and some of the queuing protocols would  
3 include things like last-in/first-out; other  
4 protocols are first-in/first-out.

5           There are other protocols where queues are 11:05:48  
6 organized in terms of so-called priority order.

7 There's other protocols where you can move elements  
8 around in a queue. There's other protocols that do  
9 other things where you can add or remove items from  
10 the beginning and end. You can then add them from 11:06:04  
11 the -- you can add or remove them from the beginning  
12 or add or remove them from the end.

13           There's a number of different ways to teach  
14 what queues do.

15           Q     Have you taught that queues don't need to 11:06:16  
16 have an order?

17           A     Again, there's different ways to organize  
18 queues. Yes, there are certainly queues that do not  
19 have an order from the point of view from the way  
20 the user is going to access their contents. 11:06:32

21           Q     What's an example of a queue that doesn't  
22 have an order?

23           A     A queue that would provide the elements in  
24 a random sequence.

25           Q     Would the queue be stored in the computer 11:06:44

1 or memory with an order?

2 MR. LEE: Objection; form, foundation.

3 THE WITNESS: I'm not sure what you mean by  
4 "order."

5 BY MR. KAPLAN: 11:07:02

6 Q So I think you were saying that a user  
7 might access the elements of a queue in a random  
8 order.

9 Did I get that right?

10 A I think I said a random sequence. 11:07:13

11 Q Fair enough.

12 The user may access the elements of a queue  
13 in a random sequence according to you; right?

14 A That's correct.

15 Q Would the queue as it's stored in the 11:07:23  
16 computer have an order?

17 MR. LEE: Objection to form, vague,  
18 confusing, incomplete.

19 THE WITNESS: Again, it's not clear what  
20 you mean by "order." 11:07:40

21 BY MR. KAPLAN:

22 Q So you -- have you heard of people  
23 describing queues as having an order?

24 A It is possible for queues to have order;  
25 although not every queue needs to be ordered. 11:07:52

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1 Q What is an example of a queue that's not  
2 ordered?

3 A A queue where the elements are accessed  
4 randomly.

5 Q What is an example of a queue that's -- 11:08:07  
6 well, let me ask a better question.

7 What is an example of a queue where the  
8 elements can only be accessed randomly?

9 MR. LEE: Objection to the form.

10 THE WITNESS: A random queue. 11:08:25

11 Are you asking for what's an application of  
12 such a thing?

13 BY MR. KAPLAN:

14 Q Well, I'm not sure I understand what you  
15 mean by "random queue." 11:08:37

16 Can you describe that a bit more?

17 A Sure.

18 You could have some collection of elements  
19 and you might want to select the elements in some  
20 random order, so it -- there could be lots of 11:08:54  
21 different reasons for doing this.

22 You might want to do this for some kind of  
23 encryption purposes, or you might want to do this  
24 for some kind of testing purposes. You might want  
25 to be able to see how different kinds of algorithms 11:09:07

1 might behave when confronted with data that's in  
2 random order, literally.

3 For example, certain algorithms behave very  
4 well on data that's nearly sorted. They perform  
5 differently on data that's randomly sorted, or not 11:09:22  
6 sorted at all. Randomly -- just randomly -- values  
7 that come in random ways.

8 And so the ability to be able to take some  
9 collection of values and provide those values in  
10 some order that's not predefined but is, in fact, 11:09:41  
11 going to be accessed based on a random number  
12 generator is not uncommon.

13 I do that all the time when I'm  
14 demonstrating various capabilities in courses I  
15 teach at Vanderbilt and elsewhere. So that would be 11:09:58  
16 an example of a way to take a collection of data, a  
17 queue of data, and access it in a random order.

18 Q Are the elements within that queue  
19 connected to the other elements within that queue  
20 randomly? 11:10:17

21 MR. LEE: Objection to the form, vague.

22 THE WITNESS: I'm not sure what you mean by  
23 "randomly."

24 BY MR. KAPLAN:

25 Q Are the elements stored in the queue in an 11:10:28



1 order in your random queue example?

2 MR. LEE: Objection to the form.

3 THE WITNESS: Not necessarily, no. Because

4 they could move around. In fact, in many

5 implementations of these forms of data algorithms 11:10:41

6 and data constructs and data structures and so on,

7 they -- doesn't really matter what order they're

8 stored in, you're going to be accessing them in

9 random order or random sequence.

10 BY MR. KAPLAN: 11:10:59

11 Q The random order or random sequence, are

12 you removing elements from the queue that are not at

13 the front or at the end of the queue?

14 MR. LEE: Objection to form, vague,

15 incomplete. 11:11:11

16 THE WITNESS: In fact, there's many

17 different implementations of the style of data

18 generation I'm describing here. Some remove

19 elements; some don't remove elements.

20 The key issue here is that you're accessing 11:11:23

21 each element in -- that's queued up in a manner that

22 is going to produce random output. And whether or

23 not something is removed or not is really an

24 implementation detail of how you would implement

25 that particular abstraction. 11:11:40

1 BY MR. KAPLAN:

2 Q In the random queue that you're describing,  
3 are elements added to the queue randomly in order to  
4 randomize it?

5 A Again. 11:11:55

6 MR. LEE: Objection to the form, incomplete  
7 hypothetical, vague.

8 THE WITNESS: There's various ways to  
9 implement these kind of techniques. Some of the  
10 ways would add the elements in some order and then 11:12:05  
11 access them randomly; others would add them randomly  
12 and access them randomly. You could add them  
13 randomly and access sequentially. There's all  
14 different ways to implement these kinds of data  
15 abstracts. 11:12:21

16 BY MR. KAPLAN:

17 Q In your view, what are the characteristics  
18 of a queue?

19 A Well, again, in what context?

20 Q A playback device context. 11:12:32

21 A So in the playback device context, as I  
22 describe in paragraph 47 of my declaration, a queue  
23 is a container that can hold multimedia or resource  
24 locators to multimedia items for playback and have  
25 different types and arrangements of multimedia data 11:12:53

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1       that could be queued up, such as single songs or  
2       playlist and so on.

3               Later I go into more detail in the context  
4       of how a POSITA would understand a playback queue to  
5       be realized in the context of the patents at issue               11:13:08  
6       in the case which appear in paragraphs 58 and 59.

7       Q     In your view, the queue can be a single  
8       data variable; right?

9               MR. LEE:  Objection.

10              THE WITNESS:  Certainly, yes.                       11:13:29

11       BY MR. KAPLAN:

12       Q     And in your view, the queue can be multiple  
13       data variables; right?

14       A     As described on paragraph 58 in my report,  
15       I mention that POSITA at the time of the invention               11:13:42  
16       would have understood that a queue could be  
17       implemented in different ways, taking different  
18       forms, such as a data construct, like a single data  
19       variable, multiple data variables, DataRay, and  
20       there's obviously other ways to do it as well.               11:13:58

21       Q     What ways can a queue not be constructed?

22              MR. LEE:  Objection to form.

23              THE WITNESS:  There's infinite ways which a  
24       queue cannot be constructed.

25       ///  
11:14:15

1 BY MR. KAPLAN:

2 Q If you were trying to hold multiple pieces  
3 of data, for example, songs, how would you store  
4 those in some type of data structure that's not a  
5 queue? 11:14:26

6 MR. LEE: Objection to form, vague,  
7 incomplete hypothetical, foundation.

8 THE WITNESS: I mean, you could certainly  
9 store anything in a way that would not be accessible  
10 in the manner that is being described here in the 11:14:56  
11 patents at issue.

12 BY MR. KAPLAN:

13 Q What do you mean by that?

14 A You could store -- you asked me, are there  
15 ways to implement something that are not a queue. 11:15:07

16 You could store data in a way that had no  
17 way to access the elements at all.

18 Q Besides not being able to access the  
19 elements at all, what are the ways that you could  
20 store data, for example, songs, not in a queue? 11:15:20

21 MR. LEE: Objection to form, foundation,  
22 scope.

23 THE WITNESS: I would have to spend more  
24 time thinking about that. I haven't prepared that  
25 analysis for today. I have to think about it some 11:15:36

1 more.

2 BY MR. KAPLAN:

3 Q Okay. Let's move on to paragraph 52.

4 Let me know when you're there.

5 A I'm there. 11:16:01

6 MR. KAPLAN: This requires me to get

7 another reference. Give me one moment.

8 I've introduced Exhibit 5.

9 (Whereupon, Google Exhibit 5 was

10 marked for identification by the 11:16:34

11 Court Reporter.)

12 BY MR. KAPLAN:

13 Q Please let me know when you see it,

14 Dr. Schmidt.

15 Exhibit 5 will be United States patent 11:16:38

16 application number 2012/89910.

17 A Okay. I'm there.

18 Q Can you go to paragraph 50 of Exhibit 5 and

19 let me know when you're there.

20 A I'm there. 11:17:42

21 Q If you could read the portion to yourself,

22 Dr. Schmidt, that begins "Selecting the play\_next

23 button 524 causes playback."

24 (Document reviewed by the witness.)

25 THE WITNESS: Okay. I see that. 11:18:18

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1 BY MR. KAPLAN:

2 Q And did you read through the rest of  
3 paragraph 50?

4 A Oh, no. Sorry. I just read that sentence.

5 I'll read the rest of it. 11:18:28

6 Q Thank you.

7 (Document reviewed by the witness.)

8 MR. KAPLAN: It seemed too quick.

9 THE WITNESS: Okay. I see that.

10 I've read it. Sorry. 11:19:04

11 BY MR. KAPLAN:

12 Q In the second sentence that you just read,  
13 the specification here refers to:

14 "Placing the selected media

15 items at the front of the 11:19:18

16 playback queue."

17 Do you know what "front of the playback  
18 queue" refers to?

19 MR. LEE: Objection; form, foundation.

20 THE WITNESS: Again, I would have to go 11:19:46

21 back and see more how they're describing what a  
22 playback queue is in this context.

23 I think the main purpose of this reference

24 was just to point out that queues can have zero

25 items. They can have one item, they can have more 11:20:01

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1       than one item. There's no requirement that a queue  
2       has to hold multiple items, which appears to be what  
3       the construction has for -- from Google.

4       BY MR. KAPLAN:

5           Q     Do you see in the portion you just read,                   11:20:19  
6       the specification also describes appending tracks to  
7       the end of the existing playback queue?

8                   Do you see that?

9                   I'm paraphrasing.

10          A     No, I don't see.   11:20:40  
11       Where is that located?

12          Q     The sentence that begins:

13                   "Selecting the Append to  
14       Queue button 526 causes the one  
15       or more selected tracks to be                                       11:21:05  
16       added to the end of an existing  
17       playback queue."

18                   Do you see that?

19          A     I do.

20          Q     The fact that the queue has a -- strike                   11:21:18  
21       that.

22                   Does the fact that the queue that they're  
23       discussing here in this specification have a front  
24       and an end indicate to you that this queue is  
25       ordered?   11:21:29

1 MR. LEE: Objection to form, foundation.

2 THE WITNESS: Again, I need to go and look

3 more carefully how they're defining the data

4 structures or if they're defining the data

5 structures that they're calling a playback queue in 11:21:45

6 this context.

7 BY MR. KAPLAN:

8 Q If you want to take a moment, you can do

9 that.

10 MR. LEE: Caution the witness to be 11:22:10

11 thorough in reviewing the document.

12 THE WITNESS: So I looked through all the

13 references to playback queue in the specification

14 that I could search for, or that came up when I

15 searched for "playback queue," and as far as I can 11:24:42

16 tell, they don't disclose the structure of the

17 queue.

18 But I will mention that the specification

19 makes it very clear that a playback queue can be

20 empty and it also mentions that playback queue can 11:24:54

21 contain one element, which in my mind is, again, as

22 I mention in my declaration, inconsistent with

23 Google's proposed construction that says that a

24 queue must be an ordered list of multimedia items,

25 implying that there's more than one of them. 11:25:14



1           And, therefore, as I say in my report  
2           towards the end of paragraph 76 -- or my  
3           declaration, sorry, that the definition that the  
4           proposal for the construction that Google is putting  
5           forth would appear to not count a queue having zero           11:25:33  
6           or one elements as being part of the construction of  
7           playback queue.

8           So I think that this reference here that I  
9           just looked through would be further indication of  
10          the inconsistency that Google has with -- Google's           11:25:50  
11          proposed construction has with other extrinsic  
12          evidence at the time.

13       BY MR. KAPLAN:

14           Q     In your view, can a queue be a list?

15               MR. LEE:   Objection to form, vague.           11:26:08

16               THE WITNESS:   There's many different ways  
17           to implement queues.   You can implement queues as  
18           raised contiguous data structures.   You can  
19           implement queues as linked lists.   You can implement  
20           queues as trees.   You can implement queues as hash           11:26:22  
21           tables.   You can implement queues as file systems.  
22           You can implement queues, as I describe in my  
23           declaration, in using other data constructs, such as  
24           multiple data variables or single data variable.  
25           There's different ways to implement queues.           11:26:40

1 BY MR. KAPLAN:

2 Q Some of those ways involve lists; right?

3 A Again, depending on how list is defined,  
4 there's different kinds of lists. So I think that's  
5 a case where certain terms are used broadly that 11:26:56  
6 probably need to be narrowed down or we have to  
7 recognize, as I mention in my report, that the  
8 implementation of the queue container data construct  
9 can take many different forms and so there's no one  
10 representation. 11:27:16

11 I think one of the big issues I have with  
12 Google's proposed construction is it tries to narrow  
13 the understanding of a playback queue to something  
14 that looks a lot more like a user defined playlist  
15 or user specified playlist as opposed to being how I 11:27:30  
16 think the term "playback queue" is actually  
17 described in the patents at issue.

18 So the instruction is just very, very  
19 narrow, overly narrow. It's reading a particular  
20 implementation detail in a way that's not 11:27:43  
21 representative of what a POSITA would understand the  
22 queue to be, and by doing so, it's also excluding a  
23 number of different embodiments that are put forth  
24 explicitly in the specification of the patents.

25 Q Let's say you have a queue that's an order 11:28:01

1 list of three items.

2 Do you follow me so far?

3 A Okay.

4 Q And you remove two of those items from your

5 queue. 11:28:13

6 Follow me so far?

7 A Okay.

8 Q Is what's remaining an ordered list, or

9 not?

10 MR. LEE: Objection to the form, incomplete 11:28:23

11 hypothetical, foundation.

12 THE WITNESS: Again, we have to define what

13 an "ordered list" means. So that's something also

14 that's not really clear from Google's construction,

15 what is meant by an ordered list. 11:28:41

16 Ordered according to what?

17 A list. It's just a lot -- I guess my main

18 issue here is that the construction that Google is

19 putting forth is inherently ambiguous because terms

20 like "ordered list" are not really defined. 11:28:58

21 And to the extent that they're narrowed

22 down to be given a definition, then the construction

23 that's put forth is overly narrow and it starts

24 excluding various capabilities that are disclosed in

25 the '615 and '033 patents. 11:29:16

1 BY MR. KAPLAN:

2 Q I'm trying to ask a narrower question here,  
3 which is -- I think we agree that you can have an  
4 order list that could be an example of a queue and  
5 then you can remove items from that queue until you 11:29:32  
6 get down to one or zero items left in the queue.

7 Are you with me so far?

8 A I understand what you said so far, yes.

9 Q And my question is: Does the queue stop  
10 being an ordered list, as soon as you get down to 11:29:52  
11 having one or zero items left in the queue, or not?

12 MR. LEE: Objection to form, vague,  
13 ambiguous.

14 THE WITNESS: Again, it's not really clear  
15 from your hypothetical when you say "ordered list," 11:30:06  
16 what that means. It's also not really clear, you  
17 can -- there's a concept of something being  
18 vacuously true.

19 So is something -- is the data structure  
20 that's empty, a data structure? 11:30:23

21 It depends how you want to define that or a  
22 data construct.

23 I think the main issue for me is that the  
24 way in which Google is defining the construction  
25 using terms like "ordered list of multimedia items" 11:30:37

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1 is vague and overly narrow and reads out things that  
2 are part explicitly anticipated and disclosed in the  
3 specification. That's the key part for my analysis.

4 BY MR. KAPLAN:

5 Q Is the fact that Google's construction uses 11:30:55  
6 the term "ordered list" incorrect because a queue  
7 can have zero or one items in it?

8 MR. LEE: Objection to form.

9 THE WITNESS: The problem with -- well,  
10 let's see. I think I describe that. 11:31:13

11 I think this is in section C.

12 Let's see. Let me just make sure.

13 So as I describe on paragraph 87 of my  
14 declaration, leaving aside whether we're dealing  
15 with one or more items, it's my opinion that a 11:31:43  
16 POSITA at the time of the invention would have known  
17 that an ordered list was not necessary in order to  
18 implement a playback queue.

19 And really as I describe several other  
20 places, such as paragraph 47 and paragraphs 48 and 11:32:01  
21 49, a playback queue is really about a container  
22 that holds the element or elements or no elements,  
23 for that matter, to be played back rather than a  
24 particular data structure organized in a particular  
25 way. 11:32:23

1 And to the key point, I think this is  
2 really getting square on to your question about  
3 ordered list, a POSITA would have understood, as  
4 people note in general who understand computing and  
5 data management, that there's lots of different ways 11:32:38  
6 to implement something like a playback queue that  
7 can take different forms, different implementation  
8 approaches, different ways of realizing the concept  
9 of a playback queue.

10 And an ordered list might be one of those 11:32:54  
11 ways, but it's not necessarily the best way to do  
12 it. Certainly not the only way to do it.

13 And so using a construction that predefines  
14 a particular implementation detail for a construct  
15 that doesn't require that level of detail to 11:33:08  
16 represent what a playback queue does in the context  
17 of these patents is just overly narrow and  
18 restrictive.

19 BY MR. KAPLAN:

20 Q I would like you to focus on my question 11:33:19  
21 because it's a bit narrower than the answer you just  
22 gave.

23 My question is: Is the fact that Google's  
24 construction uses the term "ordered list" incorrect  
25 because a queue can have zero or one items in it? 11:33:32

1           A       Well, again, as described in section C, I  
2       break this up into two parts: One is zero or more  
3       items or zero or one items, or zero, one or two or  
4       more items. That's one aspect.

5                   The ordered list part, though, as I think I           11:33:51  
6       just described, was incorrect not so much because of  
7       the plurality of multimedia items part of ordered  
8       list of multimedia items, that's a different  
9       analysis.

10                  But the ordered list is problematic because           11:34:07  
11       a POSITA would have known, as I say here in  
12       paragraphs -- in paragraph 88 -- sorry -- 87, that  
13       there are different ways to implement a queue or a  
14       playback queue because that's really what's doing  
15       here is a playback queue, and that an ordered list           11:34:27  
16       is not the essence of what it means to be a playback  
17       queue.

18                  So that's the reason why that's  
19       problematic. It has to do with that.

20                  And paragraph 88 gives an example that we           11:34:37  
21       talked about earlier how you could implement a  
22       playback queue that is not an ordered list, but that  
23       satisfies the playback queue nature of what's  
24       required by the patents.

25                  Q       In your example on paragraph 88 with           11:34:52

1     play\_now and play\_next, do those variables have an  
2     order?

3           A     The variables do not have an order, no.

4           Q     And the variables do not need to have an  
5     order in your view to qualify as a queue; right?                   11:35:07

6           MR. LEE:   Objection to the form.

7           THE WITNESS:   So I think I describe it  
8     pretty succinctly in paragraph 88 how you can have  
9     data variables that are not stored as an ordered  
10    list, as it says here, and, yet, still be able to                   11:35:29  
11    play back the media in a specified order.

12           So it describes how you could have the  
13    logic of the code play things back such that  
14    play\_now goes first followed by play\_next which goes  
15    next.   And the actual data variables that are part                   11:35:45  
16    of the data construct need not to have any order and  
17    we still get the right affect that would be desired  
18    for that particular implementation.

19    BY MR. KAPLAN:

20           Q     We talked about random queues in the past                   11:35:59  
21    prior in this deposition.

22           Would it be your opinion that if you  
23    randomly played the data variable play\_now and the  
24    random -- and randomly played -- strike that.

25           Let me try to ask a better question.                           11:36:16



1           Would it be your opinion modifying your  
2       example in paragraph 88 with play\_now and play\_next,  
3       if you played those data variables in a random  
4       order, that it would still constitute a queue?

5           A     Well, I think a good example of that would           11:36:31  
6       be the shuffle feature that you often find in  
7       playback devices where the elements in your playback  
8       queue could be played back in whatever order is  
9       deemed by the particular device to be shuffled.

10           In other words, not an order that a user           11:36:50  
11       might necessarily anticipate wouldn't be the first  
12       track of the album followed by the second track of  
13       the album followed by the third track of the album  
14       or whatever, be an album or playlist, but it would  
15       be shuffled.           11:37:05

16           So in that particular case, in this case,  
17       we have a playback queue with two elements in it and  
18       we could put it in shuffle mode and I think that  
19       would be actually a very common way of being able to  
20       use playback devices if you get tired of hearing           11:37:18  
21       songs in the same order.

22           Q     If we modified your example in  
23       paragraph 88, which has play\_now and play\_next, to  
24       remove play\_next, would you still have a queue?

25           A     I think as described in other parts of my           11:37:33

1 declaration, the '615 and '033 patents make it very  
2 clear that you can have playback queues that play a  
3 song.

4 So there's a number of discussions, that's  
5 actually the whole part about -- that's the whole 11:37:50  
6 part in section C starting on paragraph 76 where  
7 it's -- there's no reason to think that you have to  
8 have multiple items in the playback queue in order  
9 for it to still be in playback queue.

10 I have a bunch of different citations where 11:38:07  
11 it describes being able to play a song or something  
12 that's singular and that representation, the  
13 implementation -- or realization of that, probably a  
14 better term, of that capability is still done with  
15 the playback queue, just has one item in it. 11:38:22

16 Q So the answer to my question was yes;  
17 correct?

18 MR. LEE: Objection to form.

19 THE WITNESS: I think as I say in  
20 paragraph 88, the '615 Patent and by extension, the 11:38:39  
21 '033 Patent repeatedly describes queueing only a  
22 single piece of multimedia content for playback  
23 which would mean that the playback queue would only  
24 contain a single resource locator that corresponds  
25 to or indicates a single piece of multimedia 11:38:58

1 content.

2 So in that particular case, it's certainly  
3 plausible to have a single data variable be used to  
4 store the content in the playback queue, which is  
5 the single piece of media that's disclosed in the 11:39:14  
6 patent specifications.

7 BY MR. KAPLAN:

8 Q So in your example, if you just had the  
9 play\_now variable, that could still be a queue;  
10 right? 11:39:34

11 MR. LEE: Objection to form.

12 THE WITNESS: Again, as I say in this part  
13 of the report, for example, on paragraph 82, I see  
14 nothing in the claims of these patents, or in the  
15 specification of the patents, that limits the 11:39:54  
16 playback queue to something that has to contain a  
17 plurality or plural multimedia items.

18 It could have just a single item, in which  
19 case you could have a single data variable, as I  
20 think I mention in paragraph 47, as well, as various 11:40:10  
21 ways that the concept of a playback queue container  
22 could be realized.

23 BY MR. KAPLAN:

24 Q So I've asked you a specific question about  
25 your example in paragraph 88, three times now. I'm 11:40:22

1 going to ask it one more time.

2 Taking your example in paragraph 88, which  
3 has the play\_now and play\_next data variables, if we  
4 took out the play\_next data variable, would you  
5 still have a queue? 11:40:37

6 A I think I've answered that question three  
7 times by pointing out that I see nothing in the  
8 specification or the claims in these patents that  
9 require the playback queue to have multiple,  
10 multiple items in it. 11:40:55

11 And the particular example on paragraph 88  
12 is demonstrating how you could play things back in a  
13 particular order without requiring an ordered list.  
14 So that's the particular scenario.

15 But generalizing from the earlier 11:41:11  
16 discussions that I've given you those answers to  
17 your questions before, since the patent spec and the  
18 patent claims don't require the -- having more than  
19 one item, then you could have a queue that had an  
20 item -- had a single data variable. I think I've 11:41:33  
21 been consistent in saying that.

22 Q Right. I'm not sure why you're fighting  
23 this question so hard.

24 You gave an example in your declaration.

25 I'm asking about a very, very simple modification 11:41:45

1 and I don't know why you're not answering my  
2 question with respect to if you removed the  
3 play\_next variable in your example in paragraph 88,  
4 yes or no whether you would have a queue still?

5 MR. LEE: Objection to form, asked and 11:42:02  
6 answered.

7 THE WITNESS: Yeah. I think I've given you  
8 the same answer each time.

9 So as I mentioned, as I say in  
10 paragraph 83, there's nothing in the specification 11:42:13  
11 that requires there to be multiple items, plural.  
12 You could have a single item.

13 The example that's in paragraph 88 is  
14 illustrating a slightly different point, which is  
15 that you can have ordered behavior without requiring 11:42:28  
16 the use of an ordered list.

17 If you remove one of the variables and you  
18 have a single variable, you know, then assuming the  
19 example would need to be modified perhaps, the  
20 description of the example in paragraph 88 would 11:42:43  
21 have to be tweaked a little bit because it's really  
22 describing something slightly different in terms of  
23 the use case.

24 But I thought the answer I gave to your  
25 question multiple times was: It's certainly 11:42:52

1 possible to have a playback queue that has a single  
2 data variable in it. I think that's said  
3 consistently throughout my declaration.

4 As far as what would be -- need to be  
5 changed in paragraph 88, I would have to look more 11:43:07  
6 carefully because it's being used for a slightly  
7 different purpose.

8 But I think the bigger answer to your  
9 question is, as far as I see, the specifications and  
10 the claims for the two patents at issue in the case, 11:43:20  
11 it's possible to have a data construct, which is a  
12 single variable, be an implementation of a playback  
13 queue.

14 BY MR. KAPLAN:

15 Q Let's turn to paragraph 59 of your report. 11:43:34

16 A Okay. I'm there.

17 Q Do you see two and three lines from the  
18 bottom of paragraph 59 you describe media items?

19 Do you see that?

20 A I do. 11:44:05

21 Q What did you mean by "media items"?

22 A Are you referring to the thing that says:

23 "That can contain data

24 identifying one or more media

25 items (e.g. one or more resource 11:44:23

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1 locators)"?

2 Q You use "media items" there and also in the  
3 following line. I'm referring to both places.

4 A So in this case -- let's see.

5 MR. LEE: Marc, we've been going an 11:45:03  
6 hour-and-a-half and it seems like we're switching  
7 gears as Doug looks.

8 Is this okay to take a break, lunch break?

9 MR. KAPLAN: I prefer to get on to my  
10 pending question, but then I'm happy to take a 11:45:15  
11 break.

12 MR. LEE: Okay. That's good.

13 Are you thinking lunch now or press on?

14 MR. KAPLAN: Up to you and the witness.  
15 And, of course, the court reporter and videographer. 11:45:26

16 MR. LEE: I could -- it's almost  
17 2:00 o'clock for me, but that's fine.

18 THE WITNESS: So my understanding of -- or  
19 what I meant by "media items" in this context would  
20 be something akin to media content, for example, 11:45:51  
21 audio files as we described before that could be  
22 identified by or associated with resource  
23 locators -- one or more resource locators.

24 MR. KAPLAN: Let's go off the record.

25 THE VIDEOGRAPHER: We're off the record 11:46:18

1 11:46 a.m.

2 (Whereupon, a lunch recess was held  
3 from 11:46 a.m. to 12:20 p.m.)

4 THE VIDEOGRAPHER: We're on the record at

5 12:20 p.m. 12:20:24

6 BY MR. KAPLAN:

7 Q Welcome back, Dr. Schmidt.

8 You understand that you're still under  
9 oath?

10 A I do. 12:20:38

11 Q Let's turn to paragraph 100 of your  
12 declaration.

13 A I'm there.

14 Q In the sentence beginning, "Notably in this  
15 paragraph," you say that a POSITA would understand 12:20:59  
16 that a URL is so limited to having an address.

17 Do you see that?

18 A I -- is it the part that says, "Whereas a  
19 POSITA would understand a URL is not so limited"; is  
20 that what you're referring to? 12:21:18

21 Q Correct.

22 A I see that, yes.

23 Q Can you give me an example of a URL that  
24 doesn't have an address?

25 A Yes. 12:21:29



1 Q Go ahead.

2 A A so-called persistence -- or persistent  
3 URL -- sorry -- persistent Uniform Resource Locator,  
4 or PURL, P-U-R-L, would be an example of a URL that  
5 does not contain the address of the resource that's 12:21:46  
6 being requested.

7 Q How does a PURL identify a resource?

8 A It provides information that is sent to  
9 essentially the lookup service or a resolution  
10 service that then goes ahead and finds where the 12:22:06  
11 actual resource is and then sends back what's called  
12 a URL redirect back to the requester that will  
13 redirect the requester back to the actual item  
14 that's being requested.

15 So you can think of it essentially as some 12:22:25  
16 sort of proxy, or like I said, a location service or  
17 directory service where you look things up and it  
18 doesn't actually contain the address of the  
19 resource, it contains something that can be used by  
20 the persistent URL service to identify the resource. 12:22:44

21 Q Will you turn to paragraph 103 of your  
22 report. Paragraph 103.

23 A I'm there.

24 Q In this paragraph, you excerpt a few  
25 different portions of the '615 Patent specification. 12:23:08

1 Do you see that?

2 A I do.

3 Q Are any of those portions of the  
4 specification referencing resource locators?

5 A If I understand your question, you're 12:23:27  
6 referring to the portions that are from the '615  
7 Patent that starts at the very first indented  
8 paragraph on page 35 where it's talking about  
9 uniform resource indicator.

10 And then shortly thereafter, it's talking 12:24:25  
11 about how an application has the song identifier,  
12 which is another quote from the '615 spec, and then  
13 shortly below there it talks about an identifier for  
14 a single track and so on.

15 Are those the paragraphs that you're 12:24:40  
16 referring to that are excerpts from spec?

17 Q That's right.

18 A Right.

19 So all of those things, as I say here in  
20 paragraph 104, right underneath that: 12:24:50

21 "It is my opinion that a  
22 POSITA would understand from  
23 reading the '615 Patent that the  
24 'resource locator'" -- that's in  
25 the claims -- "is meant to 12:25:02

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1 encompass more than a 'URL,' as  
2 evidenced by at least the '615  
3 Patent references to" -- and then  
4 I talk about -- "'some other  
5 identification,' 'identifier,' 12:25:12  
6 and 'information,'" and so on.

7 And these are the kinds of things that are  
8 described above: Song identifier, identifier,  
9 Uniform Resource Locator. Those are examples --  
10 those are all examples given in the specification of 12:25:24  
11 resource locators demonstrating to my bigger point  
12 here in this section that resource locator is a  
13 different broader concept than a so-called Uniform  
14 Resource Locator.

15 Q Is it your opinion that PURLs are used to 12:25:43  
16 identify resources in the Cloud?

17 MR. LEE: Objection; form, foundation.

18 THE WITNESS: I'm sorry. Could you repeat  
19 the question?

20 BY MR. KAPLAN: 12:26:03

21 Q Is it your opinion that PURLs are used to  
22 identify resources in the Cloud?

23 A PURLs can be used to identify resources in  
24 a number of different locations or different  
25 contacts. The Cloud could certainly be used as one 12:26:17

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1 of them.

2 Q Are URLs used to identify resources in the  
3 Cloud?

4 MR. LEE: Objection to form.

5 THE WITNESS: So just to be clear, when we 12:26:31  
6 say "the Cloud," we're referring broadly to Cloud  
7 services provided by Cloud providers; is that  
8 correct?

9 BY MR. KAPLAN:

10 Q That's fine. 12:26:46

11 A So uniform resources -- Uniform Resource  
12 Locators, or URLs, are one of a number of different  
13 naming regimes that can be used to identify  
14 resources in the Cloud.

15 Q What are the other naming regimes that can 12:27:03  
16 be used to identify resources in the Cloud?

17 A Oh, there's all kinds of things.

18 A good example from the world of the common  
19 object request broker architecture, technology  
20 standards and specifications and implementations, 12:27:19  
21 which began in the mid 1990s continuing on to today  
22 would be something called an object reference, which  
23 is another way of being able to locate resources in  
24 the Cloud.

25 Other technologies over time, such as 12:27:33

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1 the -- Microsoft's COM mechanism and D-COMM  
2 mechanism used something called a moniker, which is  
3 another way of being able to identify resources that  
4 are existing in servers or Clouds, or basically  
5 different ways of being able to access information 12:27:52  
6 across the Internet or the World Wide Web.

7 There's also other concepts that have been  
8 used over the years, such as the mechanisms you  
9 would find in the data distribution service, which I  
10 think uses a resource -- an object reference like 12:28:07  
11 model to identify resources in distributed systems  
12 and networks and clouds.

13 There's also things such as universal  
14 unique IDs, UUIDs, global unique IDs, GUIDs. All  
15 kinds of different ways to be able to identify 12:28:25  
16 resources in Clouds and other distributed systems.

17 So URL is just one of a number of different  
18 techniques that are used in order to identify such  
19 resources.

20 Q Do each of the examples you just gave 12:28:37  
21 identify location?

22 MR. LEE: Objection to form.

23 THE WITNESS: So that's a great question.

24 So kind of going back to the concept of a  
25 persistent URL, with CORBAs object references, you 12:28:49

1 can use object references in a couple different  
2 ways.

3 One way to use an object reference is to  
4 identify a particular resource in a distributed  
5 system or in a Cloud. That would be one where the 12:29:04  
6 address information is actually encoded in the  
7 object reference.

8 As with persistent URLs, however, you can  
9 also have object references that didn't point to a  
10 particular resource but they pointed to some kind of 12:29:17  
11 naming service or directory service or locator  
12 service or whatnot, and that would then find the  
13 resource of interest, redirect -- send a redirect  
14 message back to the client, called location  
15 forwarding response, and then that would cause the 12:29:34  
16 client to redirect the call to the actual resource.

17 Very, very much along the same lines of how  
18 a persistent URL works.

19 So these concepts of distributed location  
20 and distributed naming and so on have been around 12:29:47  
21 for decades.

22 BY MR. KAPLAN:

23 Q How would you implement a system that can  
24 playback multiple songs without using a queue?

25 MR. LEE: Objection to the form, 12:29:58

1 incomplete, vague, foundation.

2 THE WITNESS: How could -- I'm not sure I  
3 understand the question.

4 BY MR. KAPLAN:

5 Q Do you have a playback system that can 12:30:13  
6 playback multiple songs?

7 Is it possible to implement that without  
8 using a queue?

9 MR. LEE: Same objection.

10 THE WITNESS: Probably. I haven't really 12:30:29  
11 thought about it very hard, but it's probably  
12 doable. I'm not sure. I don't know -- quite know  
13 the context in which you're asking the question.

14 But it could be possible. I don't really  
15 know. I haven't done the analysis to think that 12:30:41  
16 through.

17 BY MR. KAPLAN:

18 Q Do you have any examples that you can think  
19 of on how to implement such a system without using a  
20 queue? 12:30:50

21 A I would have to think about it. I don't  
22 know off the top of my head.

23 Q Is Sonos's own music queue a playback  
24 queue?

25 MR. LEE: Objection to form, foundation. 12:31:06

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1 I don't know if he's looked at Sonos's  
2 systems.

3 THE WITNESS: Yeah. I'm not really  
4 familiar with the details of how Sonos works.

5 I'm also not sure if there's one queue or 12:31:22  
6 I'm not sure if there's -- without the Sonos queue,  
7 I don't know if the products have different ways of  
8 implementing the queues, much like disclosed in the  
9 patents, there's different ways of implementing  
10 playback queues, so I'm not familiar with how those 12:31:35  
11 worked.

12 BY MR. KAPLAN:

13 Q Have you ever used Sonos products to play  
14 music from a queue?

15 MR. LEE: Objection; relevance. 12:31:44

16 THE WITNESS: I've used Sonos's products  
17 before, but I'm not sure the way in which I used  
18 them, whether I used the queue or not. I didn't  
19 look at the internals of how they were set up to be  
20 configured. 12:32:06

21 BY MR. KAPLAN:

22 Q Would you have to look at the internals of  
23 how they're set up to be configured to determine  
24 whether or not they used a queue?

25 MR. LEE: Objection; form, hypothetical. 12:32:14

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1 THE WITNESS: Like I said, I'm not -- I  
2 don't remember enough about the context in which I  
3 used them in order to form an opinion on that or  
4 not.

5 BY MR. KAPLAN: 12:32:27

6 Q How did you use the Sonos products?

7 A My son has some Sonos speakers and he has  
8 shown me how to use them, but I don't recall the  
9 details of how he did it.

10 Q Do you recall if you played more than one 12:32:48  
11 song on the Sonos speakers that you used?

12 A No.

13 Q Did you cite any technical dictionaries  
14 that define the term "resource locator" by itself?

15 A As I say on paragraph 99 in my claim 12:33:23  
16 construction declaration, the opinions that I put  
17 forth are based on my analysis of the intrinsic and  
18 extrinsic evidence of the '615 Patent as cited  
19 below.

20 My own experience is -- and my 12:33:39  
21 determination of how the POSITA would understand --  
22 would have understood the term "resource locator" in  
23 the context of the '615 Patent at the time of the  
24 invention.

25 And looking through the list of intrinsic 12:33:49

1 and extrinsic evidence that I cite here, I do not  
2 have dictionary definitions I cite to, intrinsic  
3 evidence and also extrinsic evidence in the form of  
4 other, I believe mostly, other patents from the  
5 general timeframe of the invention that used the 12:34:11  
6 word "resource locator" -- or the phrase "resource  
7 locator."

8 Q Let's say when a user transfers playback  
9 from their computing device to the playback device  
10 that they have an Internet server that sends the 12:34:38  
11 playback device a list of media items and those are  
12 going to be played back in some order on the  
13 playback device.

14 Do you understand the hypothetical so far?

15 A Sort of. So -- 12:34:54

16 Q Sure.

17 Under your constructions, do you think that  
18 the Internet server is adding identifiers to a local  
19 playback queue?

20 MR. LEE: Objection to the form, incomplete 12:35:09  
21 hypothetical, foundation.

22 THE WITNESS: Wow. I would have to take a  
23 look -- I mean, to do a proper analysis, I really  
24 have to spend some time looking through the means by  
25 which the information was requested and received and 12:35:29

1 so on to answer that question properly.

2 MR. LEE: Are you asking if that's the only  
3 way that that could work, Marc?

4 MR. KAPLAN: My question was under  
5 Dr. Schmidt's constructions, would he agree that the 12:35:44  
6 Internet server's adding identifiers to a local  
7 playback queue.

8 MR. LEE: Yeah.

9 Objection; vague and ambiguous, relevance,  
10 foundation. 12:35:58

11 BY MR. KAPLAN:

12 Q Under your constructions, Dr. Schmidt,  
13 would you agree that the Internet server's adding  
14 resource locators to a local playback queue?

15 MR. LEE: Objection; vague. 12:36:10

16 I don't even know what construction we're  
17 talking about.

18 THE WITNESS: So I will answer the question  
19 by reference to section B in -- subsection B in  
20 section 7 of my report which talks about issues 12:36:34  
21 related to what a playback queue might or might not  
22 contain with respect to multimedia items, whether or  
23 not they would be in so-called data form or  
24 identifier resource locator form.

25 And as I say throughout that section, 12:36:54

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1       there's different ways to implement such a mechanism  
2       and -- or such mechanisms, and so I'd have to know a  
3       little bit more in your hypothetical about what  
4       we're referring to here is and how it's being used  
5       and specifically what you mean by my construction. 12:37:15

6       BY MR. KAPLAN:

7           Q       So to answer the last question, the  
8       construction -- when I said "my construction," I  
9       meant the construction that you agreed with in your  
10      declaration, which is Sonos's construction. 12:37:25

11      A       Okay.

12           MR. LEE:   Same objection.

13           Still not sure what construction.

14      BY MR. KAPLAN:

15           Q       Well, I want to make sure it's clear. 12:37:37

16           Dr. Schmidt, do you understand which  
17      constructions I'm referring to?

18           MR. LEE:   Objection to Sonos's  
19      construction.

20           MR. KAPLAN:   I don't know how I can refer 12:37:50  
21      to Sonos's construction otherwise, so let me ask the  
22      witness.

23      BY MR. KAPLAN:

24           Q       If I refer to Sonos's construction for the  
25      local playback queue and resource locator terms, 12:38:00

1 will you understand what I'm referencing?

2 MR. LEE: Same objection.

3 I think he's just critiquing those  
4 constructions of Google's.

5 THE WITNESS: So in looking at -- if I have 12:38:15  
6 in my declaration under Google's proposed  
7 construction, Google's proposed construction, as we  
8 all know, is an ordered list of multimedia items  
9 that's selected by the user for playback and Sonos's  
10 proposed construction is plain and ordinary meaning, 12:38:31  
11 no construction is necessary.

12 So is that -- when you say Sonos's  
13 construction, are you -- do you mean by that plain  
14 and ordinary meaning, no construction necessary?

15 BY MR. KAPLAN: 12:38:47

16 Q I mean the plain and ordinary meaning  
17 construction proposed by Sonos and as discussed by  
18 you in your declaration.

19 A Okay.

20 Q So you can answer. 12:39:03

21 A Now that we've narrowed it down to what is  
22 meant by my construction, which is really the plain  
23 and ordinary meaning no construction necessary  
24 construction, can we please repeat the question?

25 Q Under Sonos's proposed constructions, would 12:39:17

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1       you agree that the Internet server's adding resource  
2       locators to a playback queue?

3               MR. LEE: Same objection; incomplete  
4       hypothetical, vague.

5               THE WITNESS: Again, I would really have to       12:39:31  
6       take a look to see what is going on here. I don't  
7       know how said Internet servers work. I don't know  
8       how the playback queue is being defined. I don't  
9       know how -- I mean, in your hypothetical, I'm not  
10      sure what you mean by "resource locators" and what       12:39:53  
11      kinds of information is coming from the Internet.

12              So really to do a fair and thorough justice  
13      to your question, I would have to know more -- the  
14      hypothetical would have to be flushed out quite a  
15      bit. I probably would have to do some analysis to       12:40:10  
16      see what it's doing to know if it matches the  
17      construction, the plain and ordinary meaning  
18      construction.

19      BY MR. KAPLAN:

20              Q     Are you familiar with the C++ Standard       12:40:18  
21      Template Library?

22              A     Yes.

23              Q     You've taught the C++ Standard Template  
24      Library in your classes at Vanderbilt?

25              A     I have.                                       12:40:30

1 Q Does the C++ Standard Library define  
2 queues?

3 A Yes. It defines several different queues.

4 Q There's one queue in particular that's  
5 defined in the C++ Standard Template Library; right? 12:40:40

6 MR. LEE: Objection.

7 THE WITNESS: No, there's not.

8 BY MR. KAPLAN:

9 Q How many different queues are defined in  
10 the C++ Standard Template Library? 12:40:41

11 A Well, there's at least three different  
12 queues that are defined in the Standard Template  
13 Library.

14 Q What are their names?

15 A One is called Queue, another one is called 12:41:03  
16 Priority Queue, and there's another one that's  
17 called Stack.

18 But then there's other types of queues that  
19 are defined in other ways that work in different --  
20 that provide collections of data. 12:41:19

21 So there's probably more of them, but those  
22 are three -- they're actually what's known as  
23 container adapters.

24 Q So when I say the C++ Standard Template  
25 Library Queue, can we agree that I'm referring to 12:41:33

1 the actual queue as designed in the C++ Standard  
2 Template Library?

3 THE REPORTER: I'm sorry. Can you say that  
4 question again?

5 MR. KAPLAN: Maybe I can rephrase the 12:41:54  
6 question just to make sure the witness and I are  
7 speaking the same language.

8 BY MR. KAPLAN:

9 Q When I ask what the names of the different  
10 queues are as defined in the C++ Standard Template 12:42:06  
11 Library, I believe you said that they are Queue,  
12 Priority Queue and Stack.

13 Is that fair?

14 A Those are some of the queues -- the  
15 queueing mechanisms that are defined in C++ Standard 12:42:21  
16 Template Library.

17 Q So the first one of those is called Queue  
18 and I'd like to refer to that as the C++ Standard  
19 Template Library Queue. Is that okay?

20 A I think maybe a more precise way of saying 12:42:39  
21 that would be the container adapter whose class name  
22 is Queue, because, again, there's other kinds of  
23 queues that are part of the C++ Standard Template  
24 Library.

25 Q That's a bit of a mouthful. 12:42:58



1           If I said the class that's called Queue,  
2       would you understand what I'm referring to?

3           A     Yes.

4           Q     The class that's called Queue, is that a  
5       FIFO structure? 12:43:11

6           MR. LEE: Objection to the form,  
7       foundation, vague.

8           THE WITNESS: That's a good question.

9           I believe it is, but I would have to go  
10      back and double check to make sure there's not other 12:43:39  
11      capabilities that can be accessed through that  
12      interface.

13      BY MR. KAPLAN:

14           Q     With the class Queue, you can push elements  
15      into the end of the queue; correct? 12:43:49

16           MR. LEE: Objection; form.

17           THE WITNESS: The class in C++ whose name  
18      is Queue, as I recall, has a push method that will  
19      add an element to the end of the underlying data  
20      representation. 12:44:21

21           There could be different representations  
22      used to implement the queue. That's one of the  
23      features of queues or container adapters in C++, is  
24      you can actually have data structures under the hood  
25      that implement the mechanisms that they provide. 12:44:36

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1 But if my memory serves me correctly, one  
2 of the operations on the C++ STL queue is indeed  
3 push, keeping in mind that there are other types of  
4 queues in C++ STL.

5 BY MR. KAPLAN: 12:44:54

6 Q The class queue has the ability to pop  
7 elements off the front of the queue; correct?

8 MR. LEE: Same objection; form, vague.

9 THE WITNESS: Again, it's my recollection  
10 that the C++ class named queue has pop operator that 12:45:06  
11 will remove an item from the front of the queue,  
12 although it's got rather strange semantics in that  
13 it does not actually return the item that was  
14 removed, which is kind of strange.

15 But, again, it's one of a number of 12:45:30  
16 different ways of implementing the concept of the  
17 queue.

18 MR. KAPLAN: Dr. Schmidt, could you open  
19 Exhibit 6, which I've just uploaded.

20 (Whereupon, Google Exhibit 6 was 12:45:51  
21 marked for identification by the  
22 Court Reporter.)

23 THE WITNESS: Okay. I've got it.

24 BY MR. KAPLAN:

25 Q Exhibit 6 is a presentation entitled "Key 12:46:23

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1 STL Features: Containers, Iterators, & Algorithms,"  
2 and it has your name, Douglas C. Schmidt, on the  
3 first page.

4 Do you see that?

5 A I do. 12:46:41

6 Q Is this a presentation that you created  
7 while you were at Vanderbilt?

8 A Actually, it's a portion of a presentation  
9 that I created when I was a professor earlier and  
10 have used at Vanderbilt. 12:46:55

11 Q You've used this presentation Exhibit 6 at  
12 Vanderbilt?

13 A That's correct.

14 Q Did you use this presentation in  
15 conjunction with teaching a C++ class? 12:47:06

16 A It was a course called Intermediate  
17 Software Design, which is a course that covers  
18 different ways of advanced -- well, maybe  
19 intermediary programming -- intermediate software  
20 development focusing on design patterns, as well as 12:47:24  
21 good programming techniques, debugging techniques,  
22 source code, and software engineering, management  
23 techniques, and parts of C++ are also covered as  
24 well.

25 Q If you go to page 7 of this presentation, 12:47:40

1       there's a chart on the right. It includes a column,  
2       in the second row down, that chart element says  
3       "queue" and then to the right of that there's a  
4       column that says "characteristics." It says,  
5       "First-in/first-out data structure." 12:48:00

6               Do you see that?

7       A     There's a bunch of pages named number 7.

8               Which one are you referring to in the PDF?

9       Q     There are. I'm actually referring to the  
10      final page -- 12:48:15

11      A     Okay.

12      Q     -- of the PDF.

13      A     Yes. Those are the examples of the various  
14      container adapters we were talking about earlier.

15      Q     Next to queue, it says, "First-in/first-out 12:48:27  
16      data structure."

17               Do you see that?

18      A     I do.

19      Q     Does that refresh your recollection as to  
20      whether or not the class queue is the 12:48:34  
21      first-in/first-out data structure?

22      A     That's the way it's defined in C++, yes.

23      Q     In this presentation, do you refer to  
24      stacks as queues?

25      A     If you take a -- this is -- as I mentioned, 12:48:52

1       this is an excerpt from a much longer set of  
2       material on C++ and the Standard Template Library.

3               If you were to go look in more detail at  
4       later parts that have been omitted here in the  
5       slides you're showing me, there's extensive                               12:49:08  
6       discussions of the APIs that are available for both  
7       Stack -- well, for both Stack, Queue and Priority  
8       Queue, and they all have the same API.

9               And so as a result, they're treated  
10       inconsistent -- in consistent ways with respect to                               12:49:24  
11       the operations. It's simply that the way in which  
12       the container's implemented and the semantics as  
13       defined in C++, which is not the only way to do  
14       things, of course, relative to what queues are;  
15       certainly not relevant to playback queues, per se.                               12:49:44

16               So, yes. There's parts of those APIs that  
17       are similar, so they all have the same interface.

18       Q       In the larger set of materials that you're  
19       referring to, those materials refer to the class  
20       queue -- strike that.   12:49:59

21               Sorry. I have to do a big wind up again in  
22       the larger set of materials that you're referring  
23       to.

24               Are there portions of those materials that  
25       refer to the class Stack as a queue?   12:50:12

1           A     There are portions of that material that  
2     describe how the interfaces for stacks and queues  
3     and priority queues are all the same and, therefore,  
4     what differs is the way the implementation handles  
5     the protocol for adding or removing elements from           12:50:31  
6     the container adapter.

7           Q     For example -- sorry.

8                 Go ahead.

9           A     So when I teach those parts of the course,  
10    I always mention that the interface is for Stack and           12:50:44  
11    Queue and Priority Queue are the same.

12          Q     The operations within the class queue are  
13    different than the operations within the class  
14    Stack; right -- strike that.

15                 I can ask a better question.                   12:51:06

16                 The functions within the class queue are  
17    different than the functions within the class Stack;  
18    correct?

19                 MR. LEE:  Objection to form.

20                 THE WITNESS:  I think as I just explained,           12:51:16  
21    the interface is for Stack and Queue and Priority  
22    Queue are all the same.  They have operations  
23    like -- or largely the same.  They have operations  
24    like -- I believe it's push and pop, which are very  
25    strange names for a queue especially.                   12:51:32

1 I believe, if I'm not mistaken, they have  
2 operations push and pop defined on all of them, and  
3 so those operations have the same signatures.

4 Is that what you are asking?

5 BY MR. KAPLAN: 12:51:48

6 Q Is the class Stack in the C++ Standard  
7 Template Library a last-in/first-out data structure?

8 MR. LEE: Objection to form.

9 THE WITNESS: It depends what you'd  
10 substantiate it with. 12:52:05

11 BY MR. KAPLAN:

12 Q So can I draw your attention to the last  
13 page of the presentation in Exhibit 6.

14 And on that last page next to Stack, it  
15 says "first-in/last-out data structure." 12:52:17

16 Do you see that?

17 A I do.

18 Q Do you agree that the Stack is a  
19 first-in/last-out data structure?

20 A Again, if you're asking me in the context 12:52:26  
21 of C++ STL, it all depends on what kind of container  
22 parameter you pass to the container adapter.

23 Container adapters are basically, as the name  
24 suggests, adapters, and you provide them with  
25 container implementations, for lack of a better 12:52:51

1 term, and they adapt them in different ways.

2 So depending what you pass in, how you --  
3 how you parameterize the container adapter, be it  
4 Stacked, Queue or Priority Queue, that actually  
5 dictates the behavior that you will get when you 12:53:08  
6 called a common operations push and pop on instances  
7 of those container adapters that have been  
8 substantiated.

9 Q So is it your opinion that the Stack  
10 container might be a first-in/last-out data 12:53:22  
11 structure and it might not?

12 A That is correct.

13 Q Is your opinion that the Queue might be a  
14 first-in/first-out data structure, or it might not?

15 A That's also correct. 12:53:33

16 Q Is that what your presentation says here on  
17 the final page of Exhibit 6?

18 A No. This is just describing one of the  
19 out-of-the box behaviors. But if your question was  
20 how does a Stack work, how does the Stack container 12:53:48  
21 adapter work in C++ STL, the thorough answer to the  
22 question is it depends on the type of container  
23 implementation that you use to substantiate the  
24 Stack template.

25 Q Does a Stack -- strike that. 12:54:06



1 Does a Queue as defined by the C++ Standard  
2 Template Library have order?

3 MR. LEE: Objection to form.

4 THE WITNESS: Again, keeping in mind the  
5 bigger context here, the term "playback queue" as 12:54:23  
6 defined in the '615 and '033 Patent and not relating  
7 to C++ in any way, shape, or form.

8 One of the default behaviors for the C++  
9 container adapter queue is to provide  
10 first-in/first-out semantics. 12:54:42

11 As to how it achieves that, again, is an  
12 implementation detail.

13 BY MR. KAPLAN:

14 Q My question was: Does a queue as defined  
15 in the C++ Standard Template Library have order? 12:54:59

16 MR. LEE: Objection to form.

17 THE WITNESS: Again, going back to what I  
18 was saying before, in the C++ Standard Template  
19 Library, the behavior of the queue depends on how  
20 you substantiate the queue container and adapter. 12:55:20  
21 So there's no one answer to that question, number 1.  
22 So the answer is it depends similar to the question  
23 you asked me before.

24 Likewise, just to make the point more  
25 clear, the C++ STL container adapters that have the 12:55:34

1 word "queue" in them are not at all relevant in the  
2 context of playback queue as defined in the '615 and  
3 the '033 Patent specifications and claims.

4 MR. KAPLAN: Can we take a very quick  
5 three- or four-minute break? 12:56:10

6 MR. LEE: Sure. Let's go off the record.  
7 Sit in place.

8 THE VIDEOGRAPHER: We're off the record at  
9 12:56 p.m.

10 (Whereupon, a recess was held 12:56:19  
11 from 12:56 p.m. to 1:02 p.m.)

12 THE VIDEOGRAPHER: We're on the record at  
13 1:02 p.m.

14 MR. KAPLAN: Dr. Schmidt, thank you very  
15 much for your time today. 13:02:50

16 No further questions.

17 THE WITNESS: Thank you.

18 MR. LEE: We have no questions for you  
19 either, Dr. Schmidt.

20 THE WITNESS: Thank you. 13:02:56

21 MR. KAPLAN: You may reserve signature.

22 MR. LEE: We'll reserve signature.

23 Thank you, Marc.

24 THE VIDEOGRAPHER: Off the record at  
25 1:03 p.m. 13:03:09

1                   This concludes today's testimony given by  
2           Douglas Schmidt, Ph.D. The total number of media  
3           units used was four and will be retained by Veritext  
4           Legal Solutions.

5                   (Whereupon the deposition proceedings  
6           were concluded at 1:03 p.m.)

7                               -o0o-

1            STATE OF CALIFORNIA            )  
   ) ss.  
2            COUNTY OF LOS ANGELES          )

2 | COUNTY OF LOS ANGELES )

3

4

5 I, DOUGLAS SCHMIDT, Ph.D., declare  
6 under penalty of perjury that the foregoing  
7 testimony is true and correct to the best of my  
8 knowledge and belief.

9

10 Dated this \_\_\_\_ day of \_\_\_\_\_, 2022.

11

12

13

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14 (DOUGLAS SCHMIDT, Ph.D.)

15

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1 STATE OF CALIFORNIA )  
2 COUNTY OF LOS ANGELES ) ss.  
3

4 I, D'Anne Moungey, C.S.R. No. 7872 in and  
5 for the State of California, do hereby certify:

6 That prior to being examined, the witness  
7 named in the foregoing deposition was by me duly  
8 sworn to testify to the truth, the whole truth, and  
9 nothing but the truth;

10 That said deposition was taken down by me  
11 in shorthand at the time and place therein named and  
12 thereafter reduced to typewriting under my  
13 direction, and the same is a true, correct, and  
14 complete transcript of said proceedings;

15 That if the foregoing pertains to the  
16 original transcript of a deposition in a Federal  
17 Case, before completion of the proceedings, review  
18 of the transcript {X} was { } was not required.

19 I further certify that I am not interested  
20 in the event of the action.

21 Witness my hand this 8th day of March,  
22 2022.

23 

24 Certified Shorthand Reporter  
25 For the State of California

1 GEORGE LEE, ESQ.

2 lee@ls3ip.com

3 March 8, 2022

4 RE: GOOGLE LLC VS. SONOS, INC.

5 MARCH 3, 2022, DOUGLAS SCHMIDT, PH.D., JOB NO. 5116748

6 The above-referenced transcript has been  
7 completed by Veritext Legal Solutions and  
8 review of the transcript is being handled as follows:

9 \_\_\_ Per CA State Code (CCP 2025.520 (a)-(e)) - Contact Veritext  
10 to schedule a time to review the original transcript at  
11 a Veritext office.

12 \_\_\_ Per CA State Code (CCP 2025.520 (a)-(e)) - Locked .PDF  
13 Transcript - The witness should review the transcript and  
14 make any necessary corrections on the errata pages included  
15 below, notating the page and line number of the corrections.  
16 The witness should then sign and date the errata and penalty  
17 of perjury pages and return the completed pages to all  
18 appearing counsel within the period of time determined at  
19 the deposition or provided by the Code of Civil Procedure.

20 \_\_\_ Waiving the CA Code of Civil Procedure per Stipulation of  
21 Counsel - Original transcript to be released for signature  
22 as determined at the deposition.

23 \_\_\_ Signature Waived - Reading & Signature was waived at the  
24 time of the deposition.

25

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1     \_X\_Federal R&S Requested (FRCP 30(e)(1)(B)) - Locked .PDF

2           Transcript - The witness should review the transcript and  
3           make any necessary corrections on the errata pages included  
4           below, notating the page and line number of the corrections.  
5           The witness should then sign and date the errata and penalty  
6           of perjury pages and return the completed pages to all  
7           appearing counsel within the period of time determined at  
8           the deposition or provided by the Federal Rules.

9     \_\_\_ Federal R&S Not Requested - Reading & Signature was not  
10           requested before the completion of the deposition.

1 RE: GOOGLE LLC VS. SONOS, INC.  
2 DOUGLAS SCHMIDT, PH.D., JOB NO. 5116748  
3 E R R A T A S H E E T  
4 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_  
5 \_\_\_\_\_  
6 REASON\_\_\_\_\_  
7 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_  
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22 \_\_\_\_\_  
23 \_\_\_\_\_  
24 WITNESS Date  
25



[&amp; - ability]

<b>&amp;</b>	<b>1990s</b> 107:21	75:2 81:22 92:20	<b>656</b> 2:11
<b>&amp;</b> 2:10,16 5:5,7,9 122:1 133:23 134:9	<b>1:02</b> 129:11,13 <b>1:03</b> 129:25 130:6	98:20	<b>7</b>
<b>0</b>	<b>2</b>	<b>48</b> 14:19 71:24 92:20	<b>7</b> 3:12 114:20 122:25 123:7
<b>033</b> 30:4,7,9,15 31:10,11,18 37:6,8 90:25 97:1,21 128:6 129:3 <b>06754</b> 1:6 4:15	<b>2</b> 3:14 14:2 37:21 <b>20</b> 7:19,20 <b>20-06754</b> 1:11 <b>2011/000433</b> 3:16 <b>2011/4330</b> 71:12 <b>2012/00899</b> 3:17 <b>2012/89910</b> 84:16 <b>2022</b> 1:19 2:3 4:2 4:6 131:10 132:22 133:3,5 <b>2025.520</b> 133:9,12 <b>23</b> 37:22 <b>25</b> 8:18 <b>2:00</b> 102:17	<b>49</b> 65:3,10,11 92:21	<b>71</b> 3:16 <b>7559</b> 4:18 <b>76</b> 88:2 97:6 <b>7872</b> 1:25 2:4 132:4
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<b>1</b> 3:12 4:11 7:3,5 41:7,7 43:24,24 52:11 128:21 134:1 <b>1-312-754-9602</b> 2:13 <b>10</b> 32:14 <b>10,779,033</b> 3:15 <b>100</b> 103:11 <b>101</b> 48:1 <b>103</b> 104:21,22 <b>104</b> 105:20 <b>10779033</b> 30:22 <b>1099s</b> 8:20 <b>10:16</b> 51:20,22 <b>10:28</b> 51:22,24 <b>11:46</b> 103:1,3 <b>121</b> 3:18 <b>12:20</b> 103:3,5 <b>12:56</b> 129:9,11 <b>13</b> 14:17,21,24 26:12 31:24 32:1 38:21 39:1 47:16 <b>14</b> 3:14 <b>17</b> 62:25 64:16 <b>18</b> 64:17 <b>18515</b> 132:23 <b>19</b> 14:18	<b>3</b> 1:19 2:3 3:15 4:2 30:21 31:1,11 133:5 <b>30</b> 134:1 <b>31</b> 3:15 65:22 <b>312-705-7400</b> 2:19 <b>316</b> 72:4,10 <b>318</b> 72:8 <b>32</b> 65:23 <b>320</b> 72:14 <b>33</b> 32:14,21 <b>35</b> 13:21 105:8 <b>3:20</b> 1:6 4:15 <b>3:21</b> 4:18 <b>3rd</b> 4:6	<b>5</b> 3:17 84:8,9,15,18 <b>50</b> 8:12,15,15,16 84:18 85:3 <b>51</b> 71:4,22 <b>5116748</b> 1:24 133:5 135:2 <b>52</b> 84:3 <b>524</b> 84:23 <b>526</b> 86:14 <b>555</b> 2:17 <b>58</b> 53:13 55:23 57:4,19 75:2 82:6 82:14 <b>59</b> 75:2 82:6 101:15,18 <b>5th</b> 2:18 <b>5w</b> 2:12	<b>8</b> 133:3 <b>82</b> 98:13 <b>83</b> 100:10 <b>84</b> 3:17 <b>87</b> 92:13 94:12 <b>88</b> 54:21 55:24 59:21 94:12,20,25 95:8 96:2,23 97:20 98:25 99:2 99:11 100:3,13,20 101:5 <b>8th</b> 132:21
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	<b>4</b> 3:16 63:1 65:15 71:9,10,13 <b>45</b> 37:3 <b>47</b> 33:9 52:10,13 53:14 63:22 74:17	<b>6</b> 3:5,18 121:19,20 121:25 122:11 126:13 127:17 <b>60661</b> 2:12 <b>615</b> 13:24 14:8,15 14:18,22,24 28:19 29:5 30:5 31:18 31:22 32:6,15,22 37:5,9 38:22 47:16 90:25 97:1 97:20 104:25 105:6,12,23 106:2 112:18,23 128:6 129:2	<b>9</b> 28:25 <b>9,967,615</b> 3:14 <b>91</b> 67:22 <b>93</b> 65:23 66:12 69:16 <b>94065</b> 2:18 <b>99</b> 112:15 <b>9967615</b> 29:15 <b>9:08</b> 2:3 4:2,6
			<b>a</b>
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**[able - arrangements]**

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**[determine - embodiment]**

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[playback - proper]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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